DOCUMENT RESUME

ED 158 079 08 CE 017 557

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TITLE	Multiple Learning Strategies Project. Graphics. Regular Vocational-Low Reader. [Vol. 3.]
INSTITUTION	Ingham Intermediate School District, Mason, Mich. Capital Area Career Center.
SPONS AGENCY	Bureau of Occupational and Adult Education (DHEW/OE), Washington, D.C.
BUREAU NO	498AH60038
PUB DATE	Oct 77
GRANT	G007603808
NOTE	480p.; For related documents see CE 017 554-583
EDRS PRICE	MF-$0.83 HC-$26.11 Plus Postage.
DESCRIPTORS	*Graphic Arts; *Learning Activities; Learning Modules; Photocomposition; Reading Level; *Retarded Readers; *Vocational Education; Young Adults

ABSTRACT

This instructional package, one of four designed for use by regular and low reader vocational students, focuses on the vocational area of graphics. (Low readers are identified as those reading at a grade 3-6 level.) Contained in this document are sixty-two learning modules organized into three units: camera (photomechanical reproduction), stripping, and platemaking. Each module includes these elements: a performance objective page telling the student what will be learned, what materials are needed, and how she/he will be evaluated; a section providing information needed to perform the activity; and a job-steps page detailing the steps necessary to do the task. Many visuals are included to accommodate the low reader. Technical words are defined as they appear in the text. (This document and related documents CE 017 555, CE 017 556, and CE 017 558 are one of three sets of learning modules on graphics. The other two sets are written in formats designed for educable mentally impaired and visually impaired students. The modules are part of a total set of over 1,300 modules written for different student populations. Building maintenance, dietetic assistant, small engine repair, and medical assistant are the other vocational fields covered. CE 017 554 is the final report of the project.) (JH)

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ED158079

CAPITAL AREA CAREER CENTER
Ingham Intermediate School District
611 Hagadorn Road
Mason, Michigan 48854

TO:

MULTIPLE LEARNING STRATEGIES PROJECT

GRAPHICS
Regular Vocational-Low Reader

Vol. 3

U.S. DEPARTMENT OF HEALTH,
EDUCATION & WELFARE
NATIONAL INSTITUTE OF
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CE 017557

graphics

unit: CAMERA (PHOTOMECHANICAL REPRODUCTION)

capital area career center

module: 1401 10 001
1401 10 001 3 **date:** 10/77 **level:** I

skill title: PHOTOMECHANICAL ORIENTATION & FILM PROCESSING

developed & written by: GLEN PETTIT

visuals by: MIKE SMITH

WORD GUIDE

PROCESS - TO TAKE FILM THROUGH THE CHEMICALS.

EXPOSE - LET LIGHT SHINE ON FILM.

PERFORMANCE OBJECTIVE

YOU ARE GOING TO LEARN:

1. HOW A DARKROOM IS ORGANIZED.
2. HOW TO EXPOSE AND PROCESS A LINE NEGATIVE AND HOW PHOTOGRAPHY WORKS.

IN ORDER TO DO THIS YOU WILL NEED:

A DARKROOM & LIGHT SOURCE
LINE ORTHO FILM
ORTHO PROCESSING CHEMICALS

WE WILL KNOW YOU CAN DO IT WHEN:

1. YOU KNOW WHERE TO FIND FILM, TRAYS, CHEMICALS AND LIGHT CONTROLS.
2. YOU CAN EXPOSE & PROCESS A LINE NEGATIVE.
3. YOU CAN IDENTIFY FILM EMULSION, IMAGE & NON-IMAGE AREAS.
4. YOU HAVE A BASIC UNDERSTANDING OF HOW PHOTOGRAPHY WORKS.

A TAPE OF THIS MODULE IS AVAILABLE.

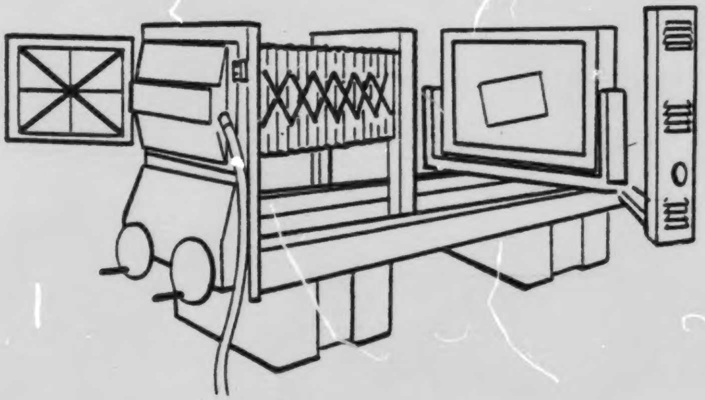
WORD GUIDE

COPY - WHAT IS PUT ON THE PROCESS CAMERA TO REPRODUCE.

INFORMATION

MORE THAN 95% OF EVERYTHING YOU READ IS PHOTOGRAPHED. IN GRAPHICS AND PRINTING TODAY, NEARLY EVERYTHING IS REPRODUCED ON FILM AT LEAST ONCE, AND IN MOST CASES, THREE TIMES. PHOTOMECHANICAL REPRODUCTION MEANS THAT FILM OR PAPER IS EXPOSED TO LIGHT ON MACHINES AND THEN DEVELOPED. IN GRAPHICS WHEN WE TALK ABOUT PHOTOGRAPHY, WE MEAN USING A HAND-HELD CAMERA:

WHEN A PRINTER TALKS ABOUT A CAMERA, HE MEANS A LARGE HEAVY "PROCESS CAMERA" THAT IS USED TO PHOTOMECHANICALLY REPRODUCE COPY (OR DRAWINGS).



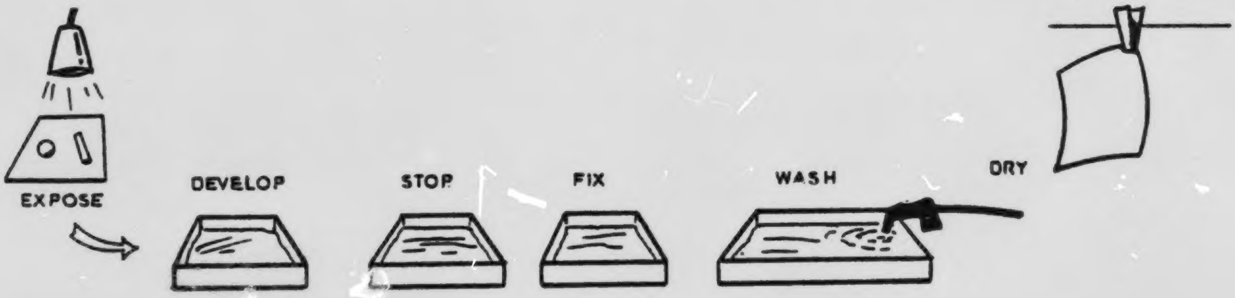
THE LARGE PROCESS CAMERA MAY BE IN THE DARKROOM BUT MOST PROCESS CAMERAS ARE ½ IN AND ½ OUT. THE END WHERE YOU PUT THE COPY IS ON THE OUTSIDE AND THE BACK END, WHERE YOU CONTROL THE CAMERA AND PUT ON THE FILM, IS IN THE DARKROOM.

THE FILM OR PAPER THAT WILL BE EXPOSED MUST STAY IN THE DARKROOM UNDER THE RED LIGHTS UNTIL AFTER IT IS PROCESSED IN THE CHEMICALS.

INFORMATION

THE RED LIGHTS ARE NOT VERY BRIGHT AND ARE CALLED "SAFE" LIGHTS BECAUSE YOU CAN WORK FOR SEVERAL MINUTES WITH THE FILM OR PAPER UNDER THESE LIGHTS AND THE RED LIGHT WILL NOT EXPOSE THE FILM OR PAPER. AFTER BEING IN THE DARKROOM A FEW MINUTES, YOU WILL SLOWLY SEE THINGS BETTER BECAUSE YOUR EYES WILL BECOME USED TO THE LOW RED LIGHT.

WHITE LIGHT WILL EXPOSE FILM. FOR THIS MOD, YOU WILL EXPOSE A SMALL PIECE OF FILM TO WHITE LIGHT AND THEN PROCESS THIS FILM TO MAKE A NEGATIVE. TO MAKE A NEGATIVE YOU FOLLOW SIX STEPS:



FOR THIS MOD, YOU WILL EXPOSE A 10 X 12.5 CM (4" X 5") PIECE OF FILM WITH SOME 'OBJECTS' ON IT, DEVELOP (2 3/4 MINUTES), STOP (1/4 MINUTE), FIX (4 MINUTES), WASH (10 MINUTES), AND DRY (15 MINUTES), TO GET A NEGATIVE.

THE EXPOSED PART OF THE FILM WILL BE BLACK AFTER PROCESSING. WHERE THE OBJECTS (KEYS, PENCIL, PAPER CLIPS, ETC.) BLOCK OUT THE LIGHT, THE NEGATIVE WILL BE CLEAR AFTER PROCESSING.

THE FILM HAS TWO SIDES. THE DARK SIDE IS CALLED THE BASE AND THE LIGHTER SIDE IS CALLED THE EMULSION. BE CAREFUL BECAUSE THE EMULSION SIDE WILL SCRATCH EASILY.

CAUTIONS

1. IT IS VERY IMPORTANT TO KEEP THE DARKROOM CLEAN AS DUST WILL SCRATCH THE EMULSION SIDE OF THE FILM AND CAUSE SMALL PIN-SIZE HOLES (CLEAR AREAS) ON YOUR NEGATIVE.

2. ANY SPILLS OR LIQUIDS ON THE FLOOR MAY CAUSE SOMEONE TO FALL.

3. BECAUSE IT IS DARK, IT IS VERY HARD TO SEE WHERE YOU ARE STEPPING, SO PICK UP ANYTHING YOU DROP AS SOON AS YOU DROP IT.

4. TURN ON WATER FAUCETS SLOWLY BECAUSE OF THE INCREASED PRESSURE IN THE HOSES. REMEMBER THE HOT WATER FAUCET IS ALWAYS ON THE LEFT.

5. KEEP THE TRAYS IN ORDER; READ WHAT IS IN THE TRAY BEFORE USING IT.

WORD GUIDE

TARNISH - DARKEN

INFORMATION

6. SOME PEOPLE ARE ALLERGIC TO DARKROOM CHEMICALS SO IF YOU GET A RASH ON YOUR SKIN, TELL YOUR INSTRUCTOR.

7. REMOVE RINGS FROM THE HAND THAT MAY GET DEVELOPER ON IT, AS THIS CHEMICAL WILL TARNISH MOST METALS.

8. KEEP THE DARKROOM DARK AND ALWAYS CALL OUT AND CHECK WITH OTHERS BEFORE EXPOSING WITH WHITE LIGHT IN THE DARKROOM.

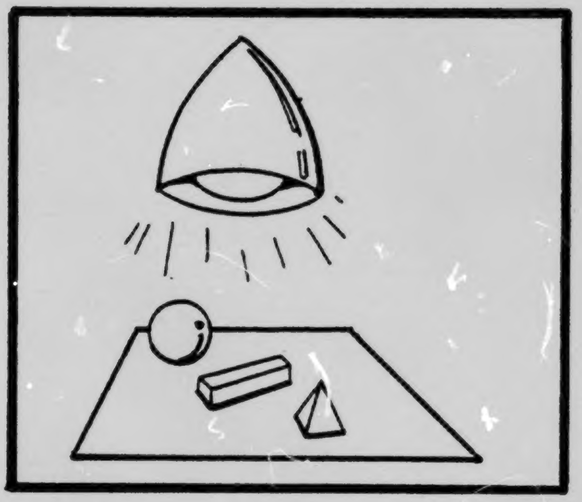
JOB STEPS

1. AFTER YOU HAVE READ THE INFORMATION PAGES, ASK YOUR INSTRUCTOR (OR AN ADVANCED STUDENT) TO CAREFULLY GO OVER EACH OF THE FOLLOWING IN THE DARKROOM WITH YOU:

A. LOCATION OF LIGHT SWITCHES
B. LINE FILM BOX & STORAGE CABINET
C. HOW TO CUT & STORE LINE FILM
D. WHERE TO PUT FILM FOR THIS CONTACT EXPOSURE
E. HOW TO SET CONTACT LAMP FOR EXPOSURE
F. HOW TO PLACE OBJECTS AND EXPOSURE FILM
G. WHERE THE SINK & TRAYS ARE KEPT
H. WHERE THE CHEMICALS ARE KEPT
I. HOW TO MIX CHEMICALS FOR THE TRAYS
J. HOW TO PROCESS FILM
K. HOW TO WASH AND DRY FILM
L. WHAT TO CLEAN UP

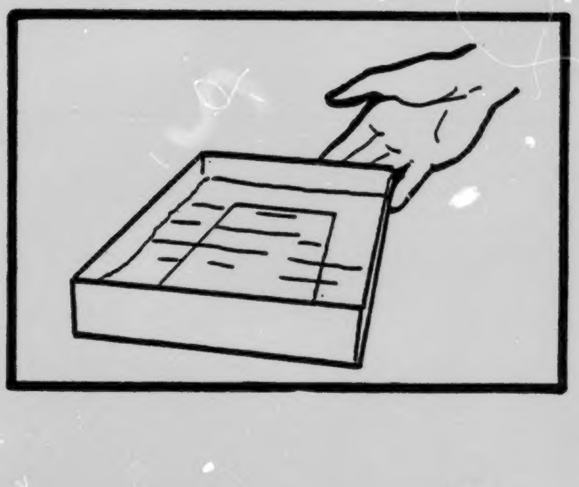
2. TAKE ALL EQUIPMENT AND MATERIALS TO YOUR WORK AREA.

3. WHEN YOU ARE READY AND HAVE COMPLETED ALL OF THE ABOVE, GET THE OBJECTS YOU WILL USE AND PLACE THESE ON A 10 X 12.5 CM SHEET OF LINE ORTHO FILM (LIGHT EMULSION SIDE UP) UNDER THE LIGHT SOURCE.



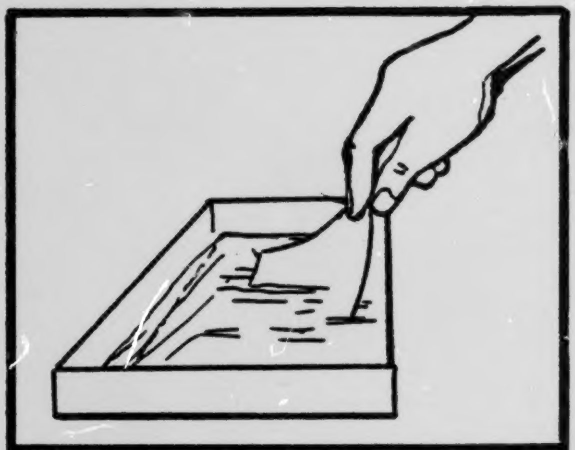
4. EXPOSE THE FILM FOR THE CORRECT TIME. RETURN THE OBJECTS.

5. PLACE THE EXPOSED FILM IN THE DEVELOPER FOR EXACTLY 2 3/4 MINUTES AND ROCK THE TRAY ABOUT ONCE EVERY 30 SECONDS.



JOB STEPS

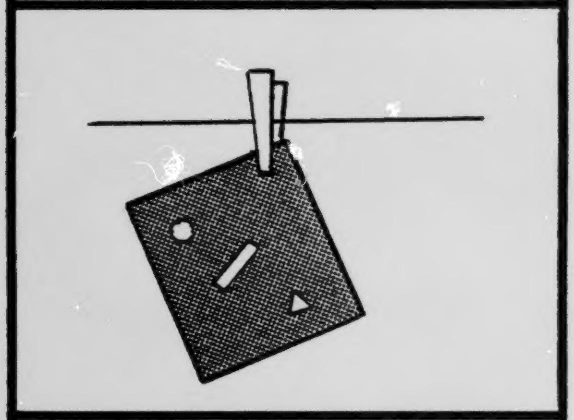
6. AFTER DEVELOPING, LIFT THE FILM OUT BY ONE CORNER AND PLACE IT IN THE STOP BATH TRAY FOR 15 SECONDS.



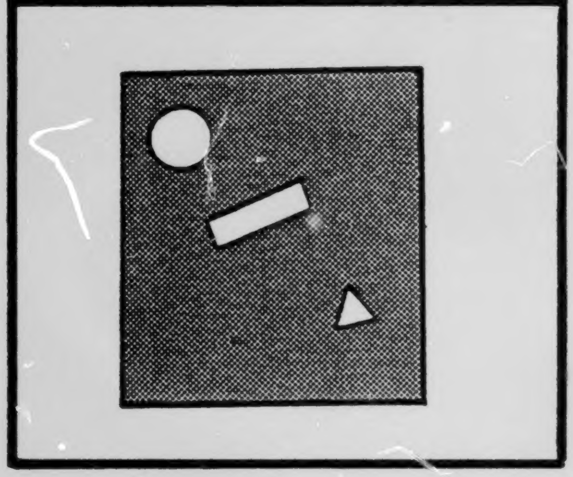
7. PUT IT INTO THE FIXER TRAY FOR FOUR MINUTES.

8. AFTER FIXING, WASH THE FILM FOR 10 MINUTES IN RUNNING WATER. NOW THE FILM IS CALLED A "NEGATIVE".

9. AFTER WASHING, DRY THE NEGATIVE. USING A CLOTHESPIN, HANG THE NEGATIVE BY THE CORNER ON THE LINE (OR YOU MAY USE THE DRYER). THE NEGATIVE MUST BE COMPLETELY DRY BEFORE YOU TOUCH IT.



10. LOOK AT YOUR NEGATIVE. THE CLEAR AREAS WHERE THE OBJECTS BLOCKED OUT ALL THE LIGHT ARE CALLED THE "IMAGE AREAS". THE IMAGE AREAS MUST BE COMPLETELY CLEAR. THE DENSE BLACK AREAS WHERE THE WHITE LIGHT EXPOSED THE FILM IS CALLED THE "NON-IMAGE" OR "BACKGROUND AREA". THE BACKGROUND SHOULD BE A SOLID DENSE BLACK. PIN-HOLES ARE CAUSED FROM DUST AND DIRT ON THE FILM.



11. GO DIRECTLY ON TO THE NEXT MOD, #1401 10 002.

graphics

unit: CAMERA (PHOTOMECHANICAL REPRODUCTION)

capital area career center

module: 1401 10 002
1401 10 002 3 **date:** 10/77 **level:** I

skill title: HOW TO MAKE A LINE SHOT ON A PROCESS CAMERA

developed & written by: GLEN PETTIT

visuals by: LAURA EIBACH

WORD GUIDE

LINE SHOT - A NEGATIVE WITH WORDS AND DRAWINGS ON IT

DEVELOPMENT GUIDE - PIECE OF PAPER WITH SHADES OF GRAY ON IT

PERFORMANCE OBJECTIVE

YOU ARE GOING TO LEARN:

1. HOW TO MAKE A 100% LINE SHOT
2. HOW TO USE A PROCESS CAMERA
3. HOW TO PROCESS USING A DEVELOPMENT GUIDE

IN ORDER TO DO THIS YOU WILL NEED:

A PROCESS CAMERA AND DARKROOM
A DEVELOPMENT GUIDE (GRAY SCALE)
PROCESSING CHEMICALS
COPY
SLIDE/TAPE ON LINE PHOTOGRAPHY

WE WILL KNOW YOU CAN DO IT WHEN:

1. YOU CAN SET-UP THE PROCESS CAMERA FOR A 100% LINE SHOT.
2. YOU CAN IDENTIFY THE 8 MAJOR PARTS OF A PROCESS CAMERA.
3. YOU CAN EXPOSE AND PROCESS A LINE NEGATIVE.
4. YOU CAN USE A DEVELOPMENT GUIDE.

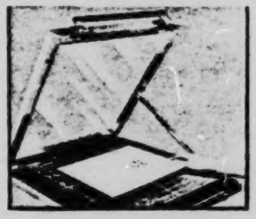
A TAPE OF THIS MODULE IS AVAILABLE.

WORD GUIDE

CONSISTENT - THE SAME EACH TIME

INFORMATION

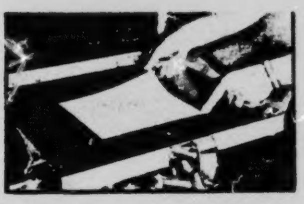
THE MOST COMMON KIND OF PROCESS CAMERA IS THE NUARC HORIZONTAL LIKE THE ONE YOU WILL BE USING. THERE ARE 6 BASIC STEPS TO EXPOSURE:



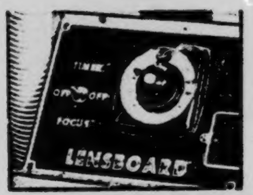
1. Load the Copyboard and development guide.

2. Set the Lens.

3. Set the focus scales.



4. Load the Film.

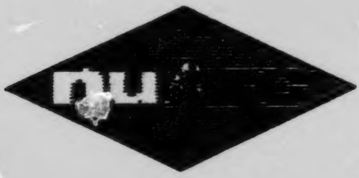


5. Set Exposure Time.

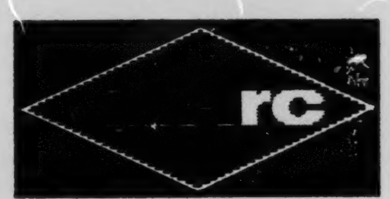
6. Expose.

IN THE KODAK SLIDE/TAPE "LINE PHOTOGRAPHY" YOU WILL LEARN ALL ABOUT EXPOSURE AND PROCESSING.

WE USE A SPECIAL DEVELOPMENT GUIDE (WITH SHADES OF GRAY ON IT) TO GET CONSISTENT QUALITY WHEN PROCESSING NEGATIVES. ALWAYS USE THIS DEVELOPMENT GUIDE ON ALL OF YOUR NEGATIVES BECAUSE DEVELOPMENT TIME, TEMPERATURE, AGE AND EXPOSURES DIFFER FOR SO MANY NEGATIVES, AND THE GUIDE WILL HELP PRODUCE CONSISTENT QUALITY.



Development guide before exposure



Develop until the "A" darkens.

WORD GUIDE

SENSITIVE - HAS A REACTION TO

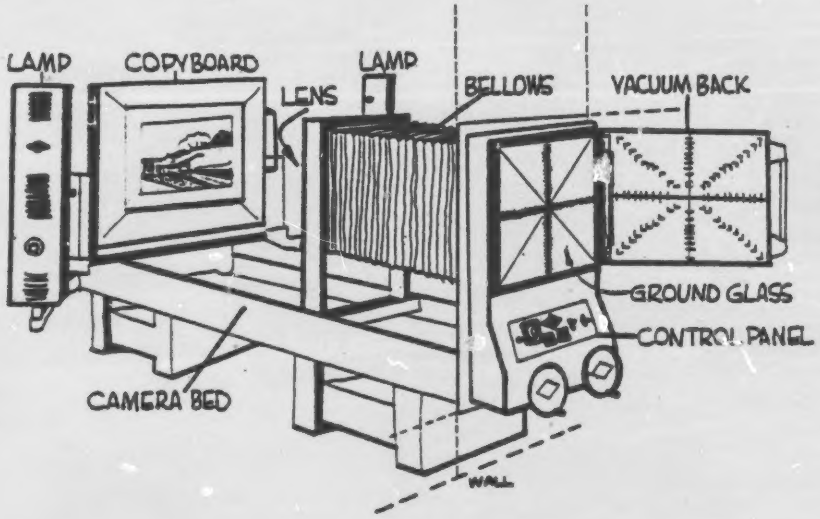
MAJOR - MAIN; MOST IMPORTANT

INFORMATION

YOU WILL BE USING ORTHOCHROMATIC FILM WHICH MEANS IT IS SENSITIVE TO BLUES AND NOT SENSITIVE TO REDS (THE RED SAFELIGHTS WILL NOT EXPOSE ORTHO FILM). THIS IS A HIGH CONTRAST (EXTREME DIFFERENCE BETWEEN BLACKS AND WHITES WITH VERY FEW GRAYS, IF ANY) MEDIUM-QUALITY LINE FILM. A 10" X 12" (25 X 30 CM) SHEET OF LINE ORTHOCHROMATIC FILM COSTS ABOUT $1.00 WITH PROCESSING. IN A TRADE SHOP, IT WOULD COST ANOTHER PRINTER ABOUT $3.00.

OUR NUARC PROCESS CAMERA COSTS ABOUT $7,000. EACH BULB COSTS ABOUT $20.00 AND WILL LAST THROUGH 20 TO 40 HOURS OF EXPOSURE. WHEN ONE BULB BURNS OUT, ALL 4 MUST BE REPLACED.

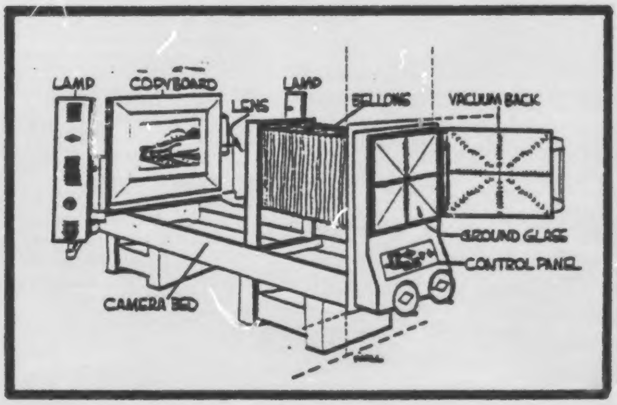
STUDY THE 8 MAJOR PARTS OF THE CAMERA BELOW:



JOB STEPS

1. WATCH AND LISTEN TO THE KODAK "LINE PHOTOGRAPHY" SLIDE/TAPE.

2. LEARN THE 8 MAJOR PARTS OF A PROCESS CAMERA (PAGE 4, INFORMATION). ASK YOUR INSTRUCTOR OR AN ADVANCED STUDENT TO GO OVER THE BASIC OPERATION WITH YOU. →



3. TAKE ALL EQUIPMENT AND MATERIALS TO YOUR WORK AREA.

4. SELECT A LINE DRAWING OR CARTOON AND PUT YOUR NAME ON IT (ABOUT 5 CM SQUARE). SHOW THIS TO YOUR INSTRUCTOR FOR AN OK.

5. YOUR INSTRUCTOR WILL GIVE YOU YOUR OWN NUARC DEVELOPMENT GUIDE. PUT YOUR NAME ON THIS GUIDE.

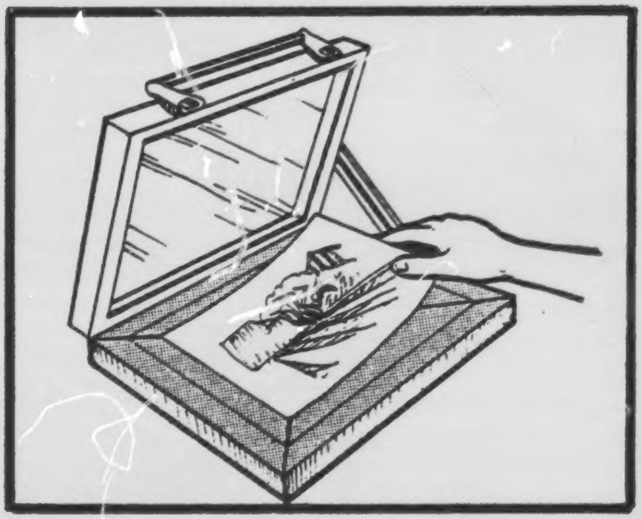
WORD GUIDE

VERTICAL - UP AND DOWN; TOP TO BOTTOM

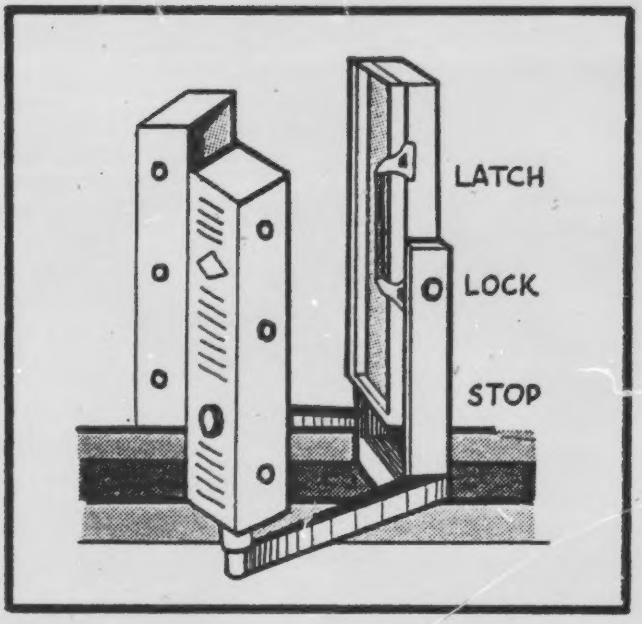
VIBRATE - SHAKE

JOB STEPS

6. PLACE YOUR COPY AND DEVELOPMENT GUIDE IN THE CENTER OF THE COPYBOARD. USE THE CENTERING LINES ON THE COPYBOARD TO GET THE EXACT CENTER. BE SURE THE GLASS IS CLEAN.



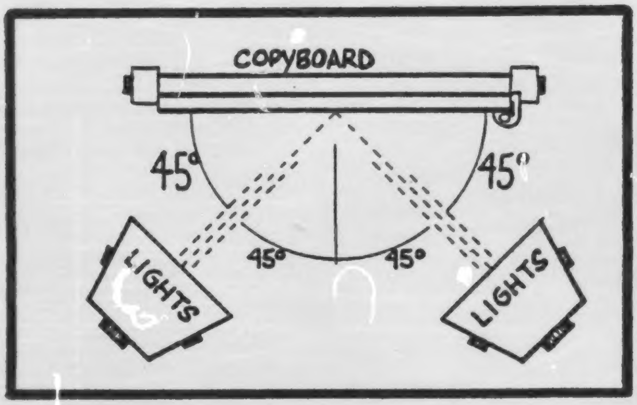
7. CLOSE THE GLASS SLOWLY. LOCK THE GLASS AND PLACE THE COPYBOARD IN A VERTICAL POSITION SLOWLY (DON'T LET IT BANG OR VIBRATE).



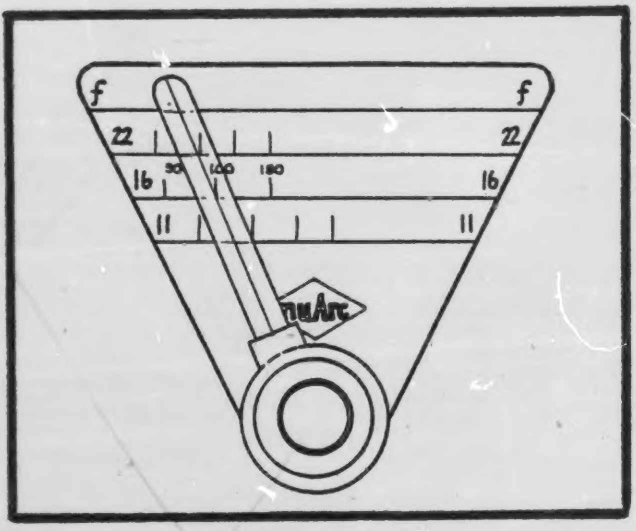
CAUTION: DOUBLE-CHECK ALL LATCHES OR LOCKS SO THEY ARE TIGHT BEFORE ADJUSTING.

JOB STEPS

8. CHECK THE ANGLE OF YOUR LIGHTS SO EACH IS AT A 45° ANGLE TO THE COPYBOARD.

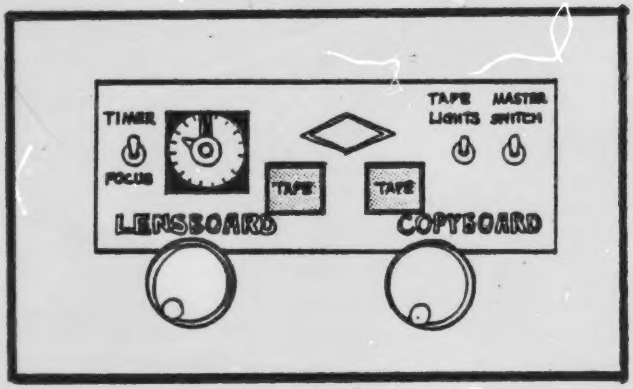


9. SET THE LENS FOR 100% AT F:16. BE SURE TO LINE UP THE RED 'HAIR-LINE' WITH 100% ON THE CORRECT LEVEL FOR F:16.



10. INSIDE THE DARKROOM, SET THE FOCUS FOR 100%. TURN THE MASTER SWITCH ON (UP) AND THE TAPE-LIGHT ON.

11. SET BOTH THE LENSBOARD AND THE COPYBOARD FOCUS AT EXACTLY 100% BY TURNING THE HANDWHEELS. WATCH THE TAPES CAREFULLY.

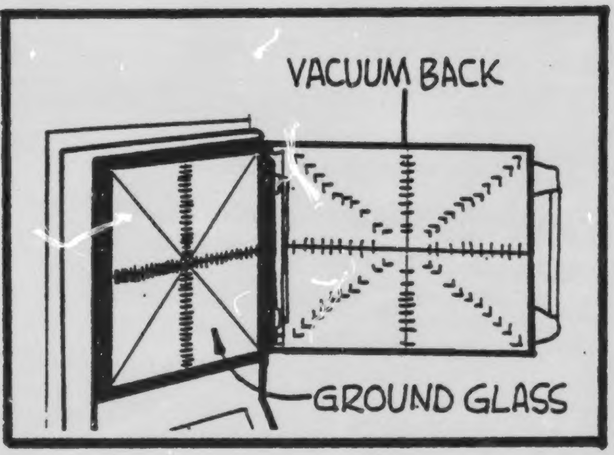


CAUTION: IF YOU RUN A TAPE TOO FAR OR OFF ITS TRACK, IT MAY DAMAGE THE STEEL TAPE (COST $80, TAKES TWO WEEKS TO MAKE)

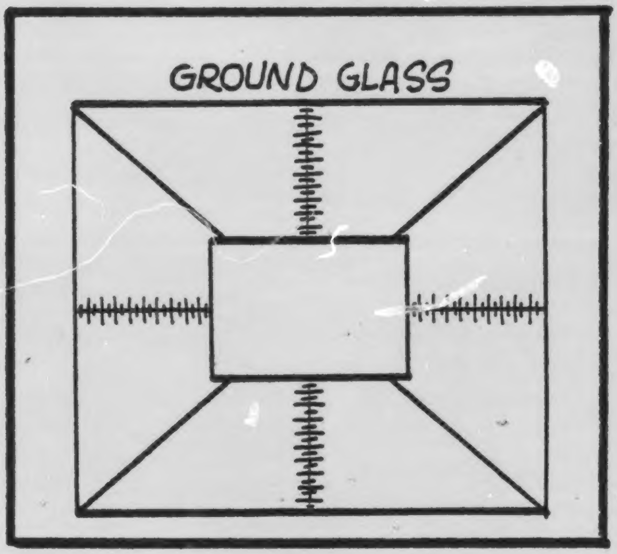
JOB STEPS

12. TO CHECK THE FOCUS, RELEASE THE SIDE LATCH AND SWING THE VACUUM BACK ALL THE WAY OPEN TO THE RIGHT.

13. LOWER THE GROUND GLASS SLOWLY UNTIL IT LOCKS (MAGNET) IN PLACE. TURN THE FOCUS SWITCH DOWN, WITH THE LIGHTS ON IN FOCUS YOU CAN SEE EXACTLY WHAT YOU ARE GOING TO REPRODUCE.

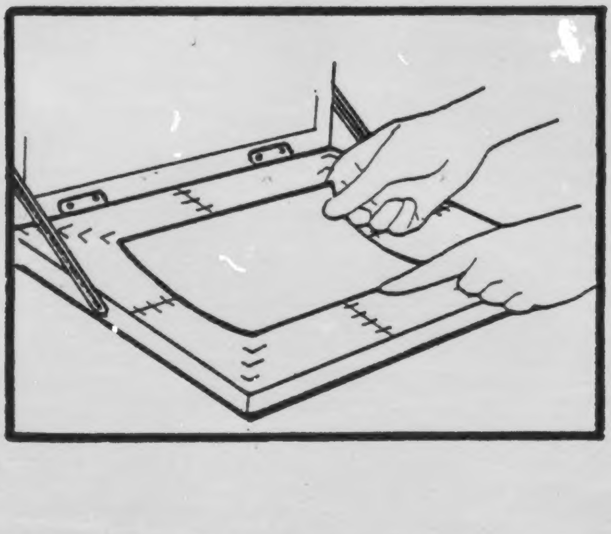


14. CHECK TO BE SURE YOUR COPY IS CENTERED AND WILL EASILY FIT ON 10 X 12.5 CM (4" X 5") FILM. IF OK, TURN THE FOCUS OFF, RAISE THE GROUND GLASS AND RETURN THE VACUUM BACK.



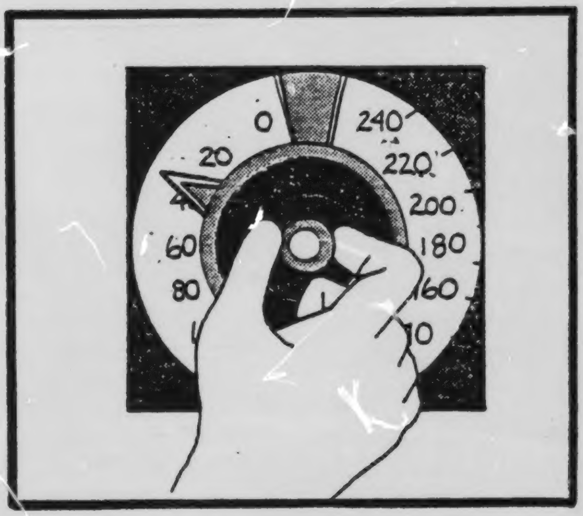
15. FROM THE LINE ORTHOCHROMATIC FILM BOX, GET A PIECE OF 10 X 12.5 CM FILM (CHECK TO SEE IF ONE IS ALREADY CUT OR NEAR THAT SIZE; DON'T LEAVE OR USE PIECES SMALLER THAN 5 CM WIDE. BE SURE TO PUT THE BOX OF FILM BACK INTO THE CABINET IMMEDIATELY.

16. PLACE AND CENTER THIS ON THE OPEN VACUUM BOARD.



JOB STEPS

17. TURN ON THE VACUUM WITH THE FOOT SWITCH. CLOSE THE BACK OF THE VACUUM.



18. SET THE TIMER (BLACK DIAL) FOR THE CORRECT EXPOSURE TIME (16 SECONDS - ?).

19. TURN THE TIMER SWITCH UP.

20. PUSH THE CENTER WHITE BUTTON TO START EXPOSURE (IT WILL SHUT THE LIGHTS OFF AT ZERO).

21. AFTER EXPOSURE, OPEN THE VACUUM BOARD, TURN OFF THE VACUUM WITH THE FOOT SWITCH, REMOVE YOUR EXPOSED FILM AND CLOSE THE CAMERA.

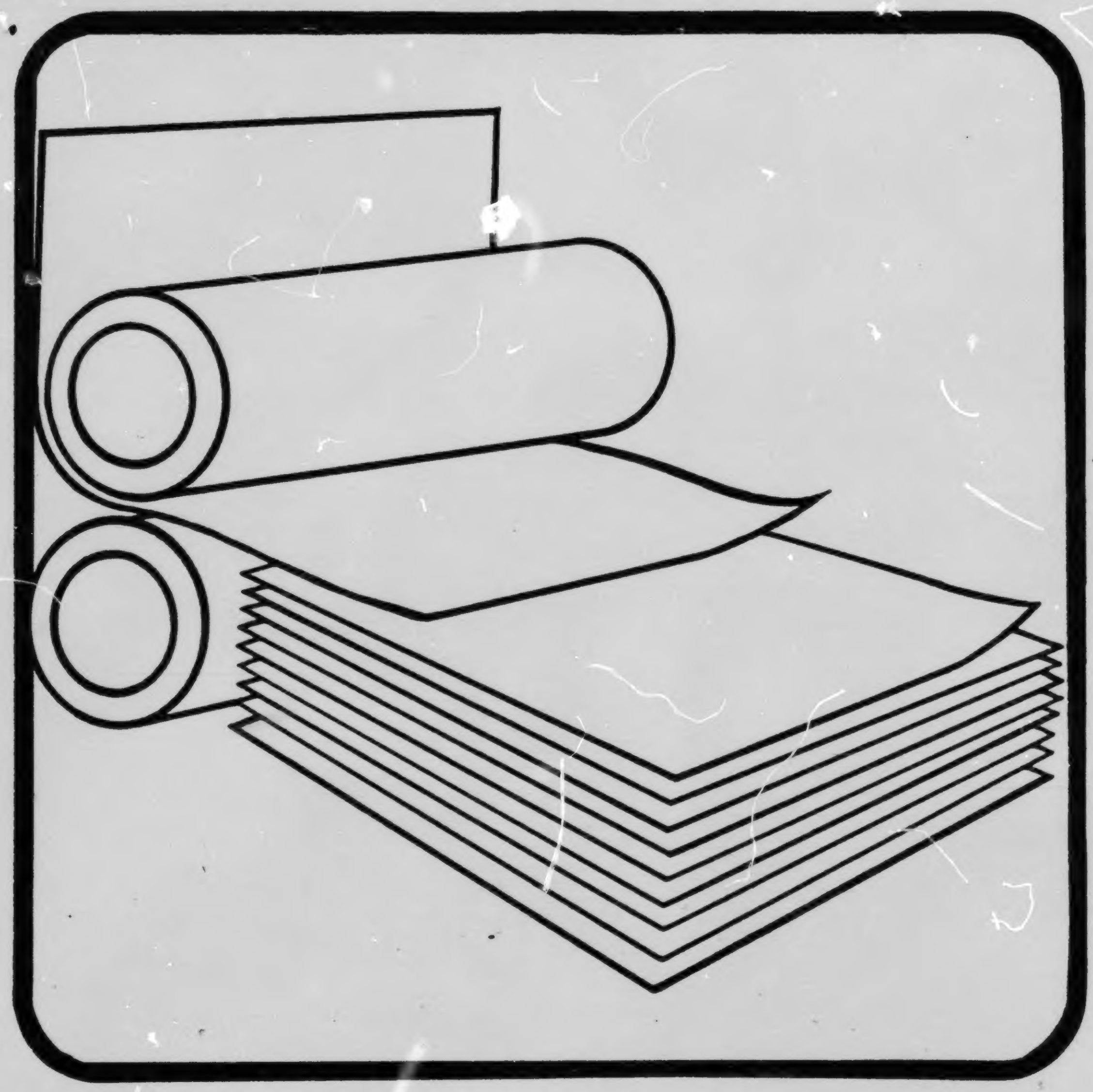
22. REMOVE YOUR COPY AND GUIDE FROM THE COPYBOARD AND ALWAYS LEAVE THE COPYBOARD IN A VERTICAL POSITION.

JOB STEPS

23. PROCESS YOUR FILM AS YOU LEARNED IN THE LAST MOD (ORIENTATION AND FILM PROCESSING):

DEVELOP - 2 3/4 MIN.
STOP - 1/4 MIN.
FIX - 4 MIN.
WASH - 10 MIN.
DRY - TIL DRY

24. WHILE YOUR FILM IS DRYING, START THE NEXT MOD. DO NOT SHOW YOUR NEGATIVE TO THE INSTRUCTOR UNTIL YOU HAVE COMPLETED THE NEXT MOD (ENLARGEMENT AND REDUCTION ON THE PROCESS CAMERA).



graphics

unit: CAMERA (PHOTOMECHANICAL REPRODUCTION)

capital area career center

1401 10 003

module: 1401 10 003 3 **date:** OCTOBER 1977 **level:** II

skill title: ENLARGEMENT AND REDUCTION ON A PROCESS CAMERA

developed & written by: GLEN PETTIT

visuals by:

WORD GUIDE

ENLARGE - MAKE LARGER THAN THE ORIGINAL
REDUCE - MAKE SMALLER THAN THE ORIGINAL

PERFORMANCE OBJECTIVE

YOU ARE GOING TO LEARN:

HOW TO ENLARGE AND REDUCE ON A PROCESS CAMERA.

IN ORDER TO DO THIS YOU WILL NEED:

A PROCESS CAMERA AND DARKROOM
A DEVELOPMENT GUIDE
PROCESSING CHEMICALS
COPY (FROM MOD 1401 10 002)
SLIDE/TAPE
A QUIZ

WE WILL KNOW YOU CAN DO IT WHEN:

1. YOU CAN MAKE A REDUCTION TO 25% AND AN ENLARGEMENT TO 250% ON A PROCESS CAMERA AND PROCESS THESE LINE NEGATIVES.
2. YOU CAN COMPARE IMAGE QUALITY.
3. YOU CAN PASS A QUIZ.

A TAPE OF THIS MODULE IS AVAILABLE.

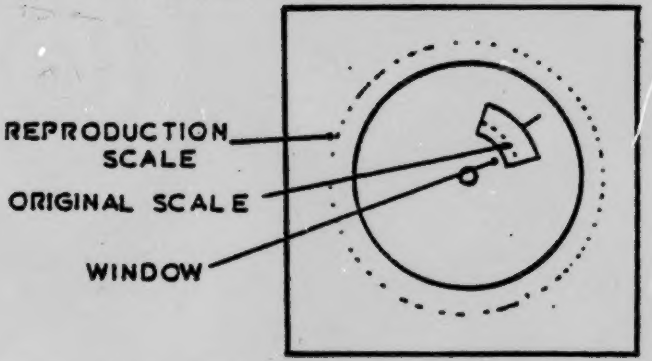
WORD GUIDE

REPRODUCE - MAKE A COPY; MAKE ANOTHER ONE JUST THE SAME AS THE FIRST.

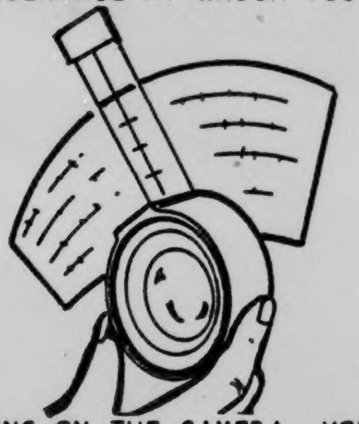
INFORMATION

OFTEN, WE HAVE TO ENLARGE OR REDUCE A NEGATIVE. ANYTHING OVER 100% IS CALLED AN ENLARGEMENT, UNDER 100% IS CALLED A REDUCTION. SAME SIZE (SS) OR 100% MEANS THE NEGATIVE WILL BE EXACTLY THE SAME AS THE ORIGINAL COPY. IN GRAPHICS, WE ALWAYS TALK ABOUT SIZE AS A PERCENTAGE. NEVER SAY "50% LARGER" OR "25% SMALLER", YOU SHOULD SAY 150% OR 75%.

TO FIND THE SIZE OR PERCENTAGE, WE USE A PERCENTAGE SCALE (MOD 1401 09 012):



THE INSIDE WHEEL IS THE ORIGINAL (WHAT YOU HAVE), THE OUTSIDE SCALE IS THE REPRODUCTION SIZE (WHAT YOU WANT) AND THE ARROW IN THE WINDOW TELLS YOU THE PERCENTAGE AT WHICH YOU SHOULD SHOOT THE COPY.



LOOKING ALONG THE LENS ON THE CAMERA, YOU WILL SEE THAT EACH F:STOP CAN BE SET AT MANY DIFFERENT PERCENTAGES. OUR CAMERA HAS A REPRODUCTION RANGE OF 20% TO 300%. THAT MEANS IF THE COPY IS 5" WIDE, WE CAN REPRODUCE IT AT 1" (20%) OR 15" (300%) IN ONE SHOT. TO CHANGE SIZE, THE TWO FOCUS SCALES MUST ALSO BE SET.

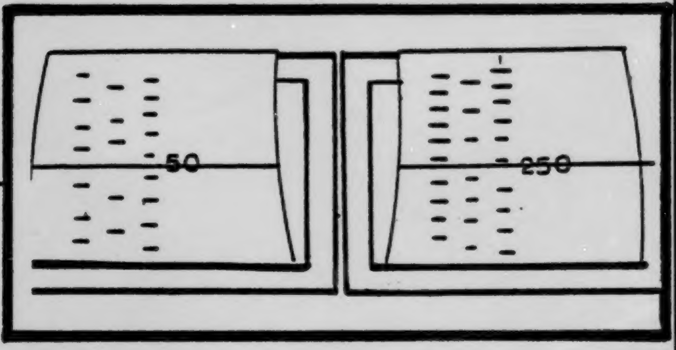
JOB STEPS

1. WATCH AND LISTEN TO THE SLIDE/TAPE FROM GATF CALLED "INTRODUCTION TO THE PROCESS CAMERA".

2. TAKE ALL EQUIPMENT AND MATERIALS TO YOUR WORK AREA.

3. PLACE AND CENTER THE SAME COPY AND GUIDE YOU USED IN THE LAST MOD (HOW TO MAKE A LINE SHOT), ON THE COPYBOARD.

4. SET THE LENS FOR 250% AT F:16.



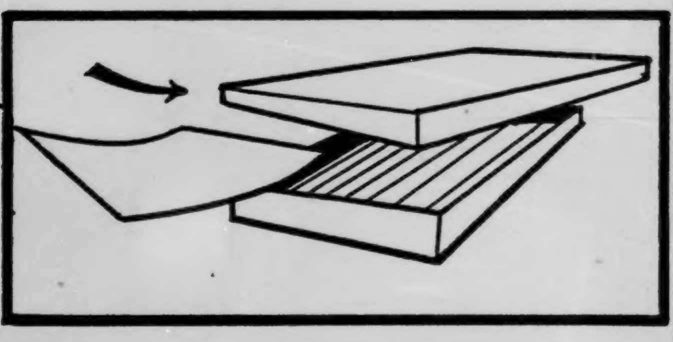
5. SET THE LENSBOARD FOCUS AND COPYBOARD FOCUS FOR 250% EACH.

6. CHECK THE FOCUS ON THE GROUND GLASS. NOTICE THAT THE IMAGE IS ENLARGED 2½ TIMES. IT WILL NOT ALL FIT ON THE 10 X 12.5 CM (4" X 5") FILM, BUT THAT IS OK.

7. NOW GET A PIECE OF 10 X 12.5 CM ORTHO LINE FILM AND PLACE IT ON THE VACUUM BOARD, CENTERED.

8. SET THE TIMER FOR A NORMAL EXPOSURE AND EXPOSE. DO NOT DEVELOP THIS FILM YET; WAIT UNTIL YOU HAVE MADE THE REDUCTION AND THEN DEVELOP THESE TWO TOGETHER (YOU CAN NOT SEE THE GUIDE ON THE ENLARGEMENT).

9. FOR NOW, PLACE THE FILM IN THE TRANSPORT BOX (JUST AN EMPTY BOX).



10. SET THE PROCESS CAMERA UP FOR A REDUCTION AND SET ALL THREE SCALES FOR 25%. CHECK FOCUS.

11. PLACE ANOTHER PIECE OF 10 X 12.5 CM FILM ON THE CAMERA AND EXPOSE AS NORMAL. REMOVE YOUR COPY FROM THE COPYBOARD.

12. PLACE BOTH PIECES OF FILM IN THE DEVELOPER AT THE SAME TIME. DEVELOP AND PROCESS AS NORMAL:

DEVELOP:	2 3/4 MINUTES
STOP:	1/4 MINUTE
FIX:	4 MINUTES
WASH:	10 MINUTES
DRY:	UNTIL DRY

JOB STEPS

13. TAKE THE SELF-QUIZ ON PAGE SIX OF THIS MOD AND WRITE YOUR ANSWERS ON A SEPARATE SHEET OF PAPER.

14. WHEN YOUR NEGATIVES ARE DRY, SHOW YOUR INSTRUCTOR ALL OF THE FOLLOWING TO GET CREDIT FOR THESE LAST THREE MODS:

A. YOUR ENLARGEMENT
B. YOUR REDUCTION
C. YOUR 100% LINE SHOT
D. YOUR COPY (FOR A, B, C)
E. YOUR CONTACT NEGATIVE
F. YOUR ANSWERS TO THE SELF QUIZ.

BE PREPARED TO ANSWER QUESTIONS ON YOUR WORK.

ANSWERS TO SELF QUIZ

1. A. COPYBOARD
   B. LAMPS
   C. BED
   D. LENS
   E. BELLOWS
   F. GROUND GLASS
   G. VACUUM BACK
   H. CONTROLS

2. 20% TO 300%

3. LIGHT

4. WHITE NON-IMAGE

5. A. DEVELOPER - 2 3/4 MINUTES
   B. STOP - 1/4 MINUTE
   C. FIX - 4 MINUTES

6. UNEXPOSED

7. REDUCE

8. EMULSION

9. CONSISTANT QUALITY

10. A. LENS OPENING
    B. LENSBOARD
    C. COPYBOARD

SELF QUIZ

USE A SEPARATE SHEET OF PAPER FOR YOUR ANSWERS. WHEN FINISHED, CHECK YOUR ANSWERS (SEE BOTTOM OF PAGE 5).

1. FROM THE ILLUSTRATION, NAME THE 8 MAIN PARTS OF A PROCESS CAMERA.
2. WHAT IS THE ENLARGEMENT-REDUCTION SIZE RANGE FOR OUR CAMERA?
3. WHICH IS THE EMULSION SIDE OF THE FILM (THE LIGHT OR DARK SIDE)?
4. WITH ORTHO FILM, DOES THE BLACK IMAGE OR WHITE NON-IMAGE AREAS EXPOSE ON THE FILM?
5. LIST THE THREE CHEMICALS USED TO PROCESS FILM AND THE LENGTH OF TIME THE FILM SHOULD BE IN EACH.
6. IN THE FIXER, THE _______ AREA IS WASHED OFF THE FILM.
7. TO IMPROVE IMAGE QUALITY, IS IT BETTER TO ENLARGE OR REDUCE?
8. WHICH SIDE OF THE FILM WILL SCRATCH EASILY?
9. WHAT IS THE PURPOSE OF A GRAY SCALE OR DEVELOPING GUIDE?
10. WHEN YOU CHANGE REPRODUCTION SIZE ON THE PROCESS CAMERA, WHAT THREE SCALES MUST BE CHANGED?

graphics

unit: CAMERA (PHOTOMECHANICAL REPRODUCTION)

capital area career center

1401 10 004

module: 1401 10 004 3 **date:** 10/77 **level:** II

skill title: LINE COPY FOR THE PROCESS CAMERA

developed & written by: GLEN PETTIT

visuals by: MIKE SMITH

WORD GUIDE

IMAGING MATERIALS - PENS, PENCILS, MARKERS, INK, ETC.

PERFORMANCE OBJECTIVE

YOU ARE GOING TO LEARN:

HOW TO EVALUATE THE DIFFERENT KINDS OF COPY IMAGING MATERIALS AND PAPERS FOR REPRODUCTION ON THE PROCESS CAMERA.

IN ORDER TO DO THIS YOU WILL NEED:

PROCESS CAMERA AND DARKROOM

ORTHO FILM AND CHEMICALS

DIFFERENT KINDS OF COPY AND PAPERS

WE WILL KNOW YOU CAN DO IT WHEN:

1. YOU CAN EXAMINE COPY, PAPER AND IMAGING MATERIALS BEFORE THEY ARE EXPOSED TO FIND OUT HOW WELL IT MAY REPRODUCE.
2. YOU CAN SELECT THE BEST PAPER, COPY AND IMAGING MATERIAL.

A TAPE OF THIS MODULE IS AVAILABLE.

WORD GUIDE

ABSORB - SOAK UP, LIKE A SPONGE.

TEXTURE - SURFACE

REFLECTED - BOUNCED OFF OF ARTICLE

INFORMATION

THERE ARE MANY KINDS OF COPY AND A CAMERA PERSON MUST BE ABLE TO QUICKLY RECOGNIZE THE TYPE, COLOR AND TEXTURE OF THE COPY. THERE ARE MANY SHADES OF EACH COLOR AND EACH WILL REPRODUCE DIFFERENTLY. THERE ARE ALSO DIFFERENT SHADES OR TONES OF WHITE AND OF BLACK.

TEXTURES ARE VERY IMPORTANT BECAUSE THEY CONTROL HOW MUCH LIGHT IS ACTUALLY REFLECTED FROM THE COPY. SMOOTH WHITE PLASTIC WILL REFLECT MUCH MORE LIGHT THAN A WHITE SWEATER. THERE ARE MANY KINDS OF PAPERS AND INKS AND SOME ARE MADE ESPECIALLY TO REFLECT A LOT OF LIGHT (GLOSSY) WHILE OTHERS ABSORB LIGHT (FLAT OR DULL).

BECAUSE PHOTOMECHANICAL REPRODUCTION DEPENDS ON LIGHT REFLECTION, THE ACTUAL AMOUNT OF LIGHT REFLECTING FROM THE COPY (BOTH IMAGE AND NON-IMAGE AREAS) IS VERY IMPORTANT. WE CAN CHANGE EXPOSURE TIME, AND PROCESSING TIME, OR USE FILTERS TO HELP - BUT WE MUST LEARN TO EVALUATE OUR COPY AND MAKE A DECISION BEFORE THE FIRST EXPOSURE. THE MOST IMPORTANT THING TO REMEMBER IS THAT WE NEED A HIGH CONTRAST BETWEEN THE IMAGE (BLACK WORDS) AND NON-IMAGE AREAS (WHITE PAPER).

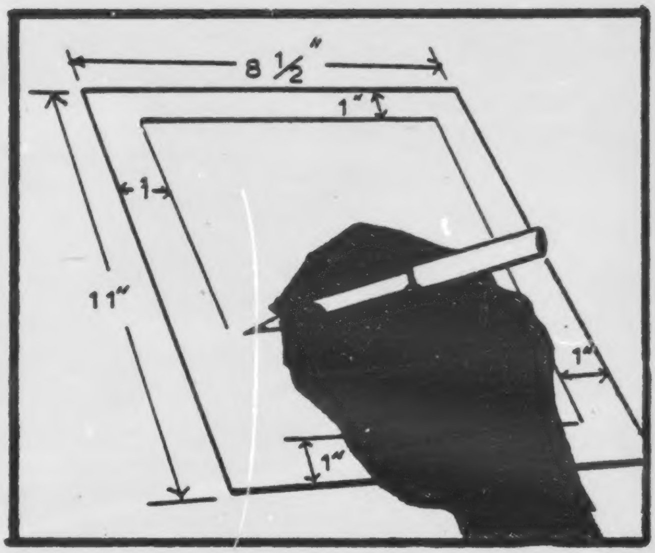
FOR THIS MODULE, YOU WILL PREPARE A SAMPLE SHEET WITH ALL KINDS OF COPY, TEXTURES AND PAPERS TO EVALUATE THEIR REPRODUCTION QUALITY.

JOB STEPS

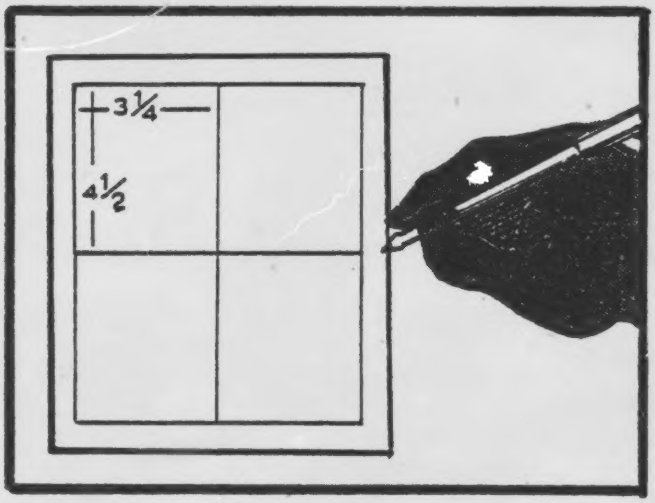
1. WATCH AND LISTEN TO THE SLIDE/ TAPE FROM GATF CALLED "LINE COPY FOR THE PROCESS CAMERA".

2. TAKE ALL EQUIPMENT & MATERIALS TO YOUR WORK AREA.

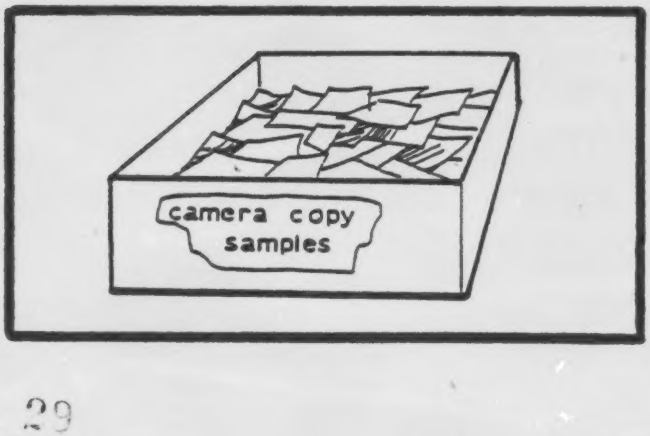
3. MAKE UP A SAMPLE SHEET WITH AT LEAST SIX DIFFERENT PAPERS, SIX COLORS, SIX KINDS OF COPY AND SIX COLOR INKS. TO DO THIS, GET A SHEET OF PAPER (8½" X 11") AND DRAW A LARGE BOX 1" INSIDE OF EACH SIDE (SO IT IS 6½" X 9"), USING A BLACK BALL POINT PEN. →



4. DIVIDE THIS LARGE BOX INTO 4 QUARTERS WITH THE BLACK BALL-POINT PEN, AS SHOWN. →



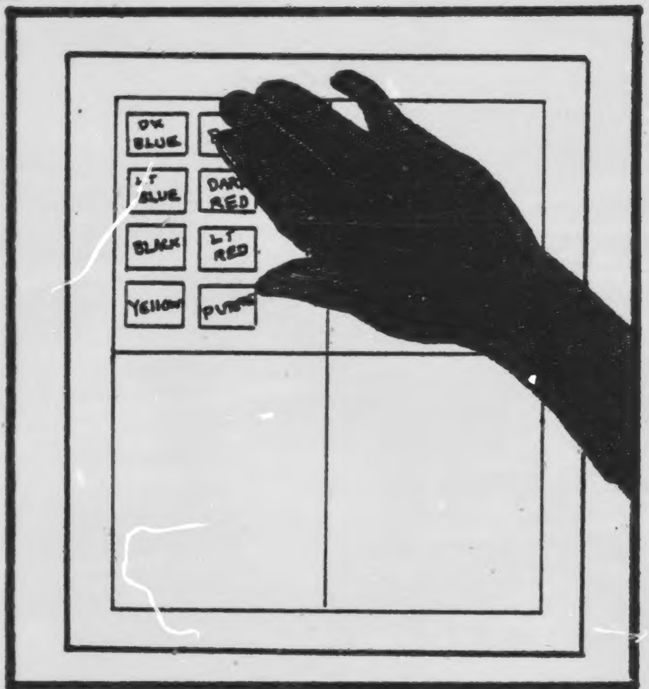
5. NOW YOU ARE READY TO START COLLECTING DIFFERENT KINDS OF COPY, PAPER AND INKS TO PASTE-UP ON THIS SHEET AND PHOTOMECHANICALLY REPRODUCE ON ORTHO FILM. THERE SHOULD BE A SMALL BOX WITH PIECES OF SAMPLE COPY YOU CAN START WITH. ASK YOUR INSTRUCTOR (OR ANOTHER STUDENT) TO SHOW YOU WHERE TO GET THE BOX OF "CAMERA COPY SAMPLES". →



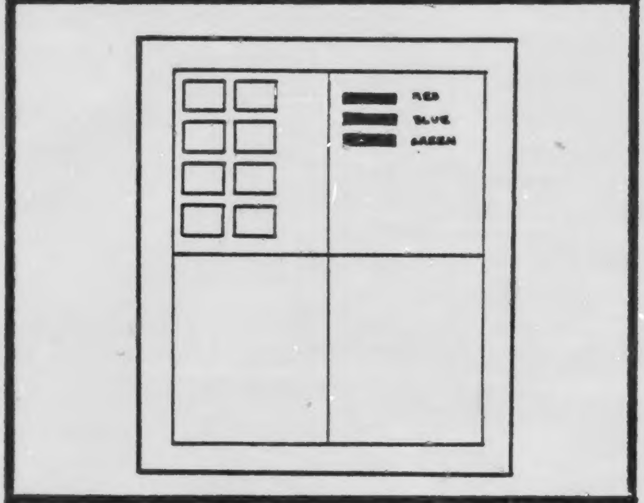
JOB STEPS

6. FIRST, FIND AT LEAST SIX DIFFERENT COLORS OF PAPER. YOU ONLY NEED PIECES ABOUT 1" OR 2 CM SQUARE IN SIZE. YOU COULD USE UP TO 12 DIFFERENT COLORS OF PAPER.

7. VERY NEATLY, TYPE OR PRINT THE COLOR OF EACH SAMPLE ON IT AND PASTE-UP ONTO THE CAMERA COPY SAMPLE SHEET YOU JUST DREW. TRY TO FIND AT LEAST THE SIX MOST COMMON COLORS.

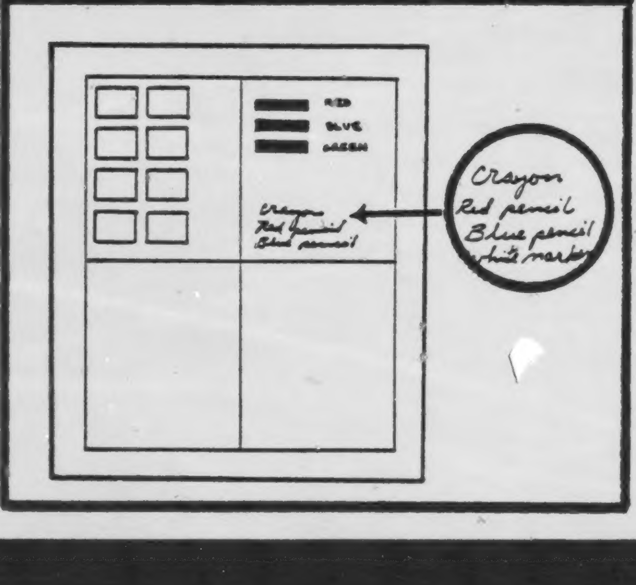


8. IN ONE BOX, WE WANT TO USE AS MANY INKS OR MARKERS AS WE CAN FIND. USING FELT MARKERS (RED, BLUE, YELLOW, ORANGE, GREEN, PURPLE AND BLACK), DRAW A SHORT LINE WITH EACH AND THEN USE A BLACK BALL POINT PEN TO WRITE THE NAMES OF EACH COLOR BESIDE AS SHOWN:



9. ALSO, IN THE INK QUARTER, USE THE FOLLOWING TO WRITE ITS OWN NAME, AS SHOWN:

CRAYON, RED PENCIL, BLACK PENCIL, LIGHT BLUE PENCIL, RED BALL POINT, BLUE BALL POINT, BLACK BALL POINT, TYPEWRITER (FABRIC RIBBON), TYPEWRITER (CARBON RIBBON).



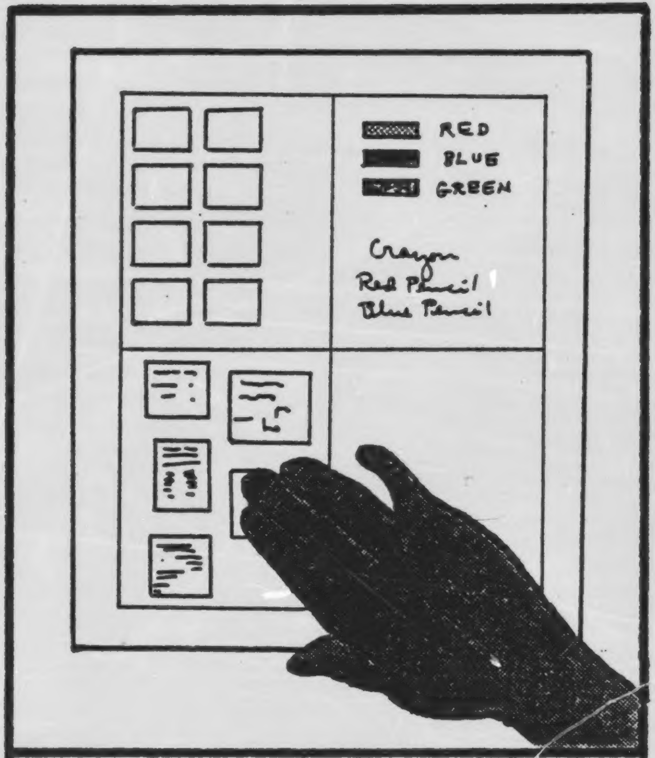
JOB STEPS

10. IN THE THIRD QUARTER, WE WANT TO COLLECT AT LEAST SIX DIFFERENT KINDS OF COPY, ALL PRINTED ON WHITE PAPER (ABOUT 1" SQUARE PIECES).

A. TRY TO FIND DIFFERENT TEXTURES OF PAPER (NEWSPAPER, SMOOTH MAGAZINE PAPER, HEAVY CARD, ROUGH, ETC).

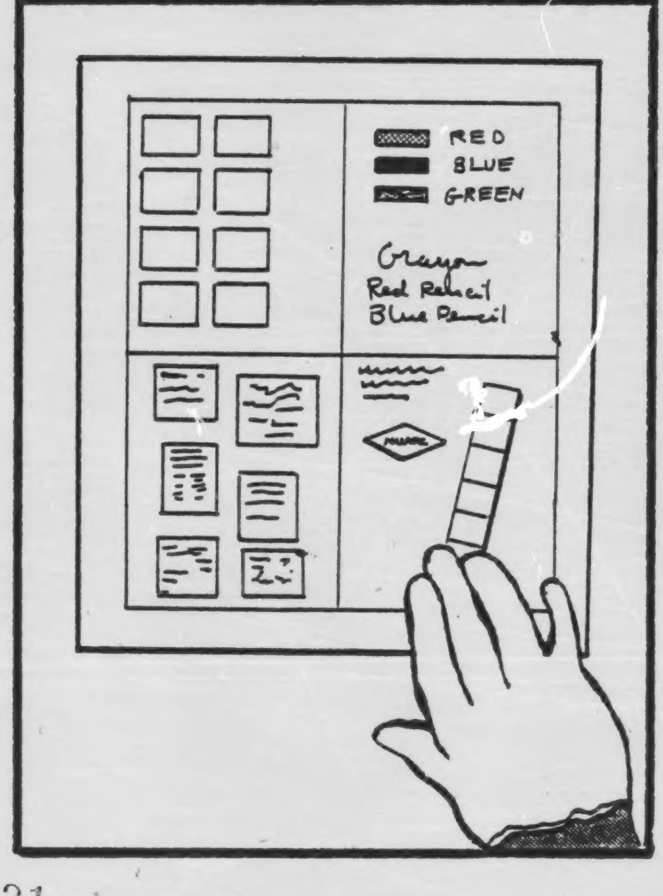
B. PASTE THESE ON YOUR CAMERA COPY SAMPLE SHEET.

11. IN THE FOURTH QUARTER, PLACE YOUR NUARC DEVELOPMENT GUIDE AND ASK YOUR INSTRUCTOR FOR A 12-STEP GRAY SCALE.

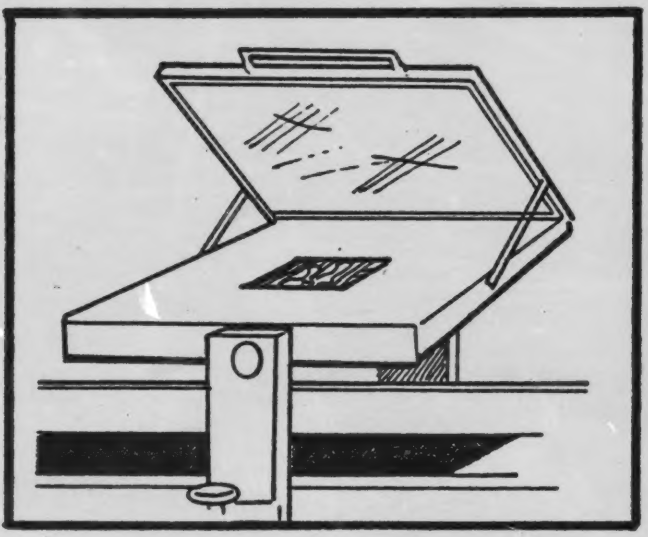


12. PLACE (DO NOT PASTE-UP) THESE IN THIS QUARTER WHEN YOU ARE READY TO EXPOSE. ALSO, INCLUDE YOUR NAME, TODAYS DATE AND THIS MODULE NUMBER IN THIS QUARTER.

CAUTION: DO NOT TOUCH THE SURFACE OF THE 12-STEP GRAY SCALE. YOUR FINGER PRINT WILL CAUSE THE EMULSION TO YELLOW.



13. WHEN YOU HAVE ALL YOUR COPY ON THE CAMERA COPY SAMPLE SHEET, PLACE IT CENTERED ON THE COPYBOARD. SET THE CAMERA FOR A REDUCTION TO 50% (3 SETTINGS).



14. PLACE A PIECE OF 10 X 12.5 CM (4" X 5") ORTHO FILM ON THE VACUUM BACK AND EXPOSE THE FILM AS NORMAL (NORMAL EXPOSURE TIME).

15. AFTER NORMAL EXPOSURE, PROCESS YOUR FILM AS NORMAL.

16. SAVE THIS COPY. GO DIRECTLY ON WITH THE NEXT TWO MODS AND USE THIS SAME COPY FOR THESE "REPRODUCTION AND QUALITY CONTROL MODS" (1401 10 005 & 1401 10 006).

graphics

unit: CAMERA (PHOTOMECHANICAL REPRODUCTION)

capital area career center

module: 1401 10 005
1401 10 005 3 **date:** 10/77 **level:** III

skill title: FILM EXPOSURE: REPRODUCTION & QUALITY CONTROL

developed & written by: GLEN PETTIT

visuals by: DAVE BROWN

WORD GUIDE

IMAGING MATERIAL - PENS, PENCILS,
MARKERS, INK, ETC.

PERFORMANCE OBJECTIVE

YOU ARE GOING TO LEARN:

HOW DIFFERENT EXPOSURE TIMES AFFECT THE REPRODUCTION OF DIFFERENT KINDS OF CAMERA COPY.

IN ORDER TO DO THIS YOU WILL NEED:

PROCESS CAMERA AND DARKROOM

10 X 12.5 CM ORTHO FILM (3 PIECES) AND CHEMICALS

VARIOUS KINDS OF COPY AND PAPERS

EMPTY TRANSPORT BOX FOR FILM STORAGE

WE WILL KNOW YOU CAN DO IT WHEN:

1. YOU CAN EVALUATE AND COMPARE REPRODUCTION QUALITY OF COPY WHEN OVER OR UNDER-EXPOSED.
2. YOU CAN DECIDE IF A SPECIFIC TYPE OF COPY, PAPER OR IMAGING MATERIAL SHOULD HAVE THE EXPOSURE CHANGED FROM NORMAL TO IMPROVE REPRODUCTION QUALITY.

A TAPE OF THIS MODULE IS AVAILABLE.

INFORMATION

THE MOST IMPORTANT THING IN PHOTOMECHANICAL REPRODUCTION IS TO GET EXACTLY THE RIGHT AMOUNT OF LIGHT INTO YOUR FILM. TOO MUCH LIGHT AND YOUR FILM IS OVER-EXPOSED (TOO BLACK, LETTERS FILLING IN), TOO LITTLE AND THE FILM IS UNDER-EXPOSED OR GRAY (THIN WITH PINHOLES).

TO CONTROL THE AMOUNT OF LIGHT, WE CAN CHANGE THE SIZE OF THE LENS (APERTURE) THROUGH WHICH THE LIGHT COMES TO THE FILM, OR THE LENGTH OF EXPOSURE TIME.

IN THE GATF SLIDE/TAPE, "PROCESS CAMERA EXPOSURE DETERMINATION", YOU WILL LEARN ABOUT EXPOSURE, DISTANCE, APERTURE AND RESOLUTION.

FOR THIS MOD, YOU WILL USE THE COPY YOU USED IN THE LAST MOD (THE CAMERA COPY SAMPLE SHEET) TO TRY OUT DIFFERENT EXPOSURE TIMES.

BECAUSE OUR PROCESS CAMERA IS A LARGE, MORE MODERN CAMERA, YOU DO NOT HAVE TO CHANGE THE EXPOSURE TIMES WHEN YOU CHANGE SIZE (THIS IS DONE AUTOMATICALLY WITHIN THE LENS DIAPHRAGM CONTROL).

YOU MAY WANT TO COMPARE DIFFERENT F:STOPS ON OUR PROCESS CAMERA BY SETTING THE CAMERA ON FOCUS AND LOOKING THROUGH THE BELLOWS AS SOMEONE CHANGES F:STOPS (AT 100%) FOR YOU.

JOB STEPS

1. WATCH AND LISTEN TO THE SLIDE/ TAPE FROM GATF CALLED "PROCESS CAMERA EXPOSURE DETERMINATION".

2. TAKE ALL EQUIPMENT & MATERIALS TO YOUR WORK AREA.

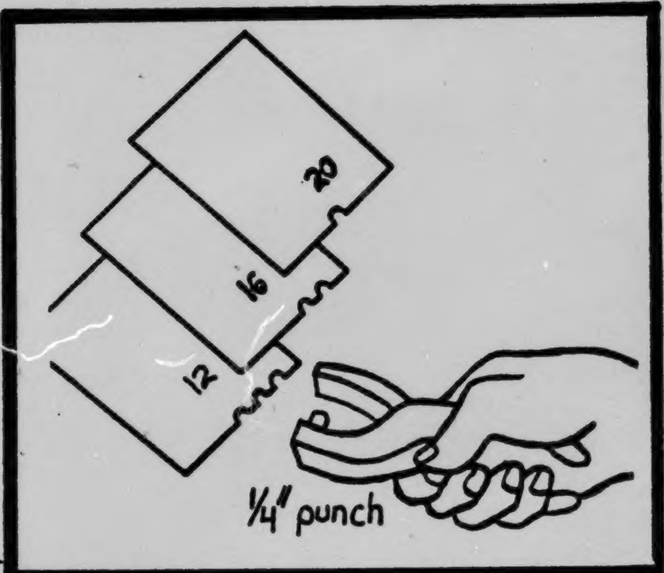
3. PLACE THE 'CAMERA COPY SAMPLE SHEET' YOU USED IN THE LAST MOD (BE SURE TO INCLUDE THE 12-STEP GRAY SCALE) IN THE COPYBOARD. SET THE CAMERA FOR 50%.

4. MAKE THESE THREE DIFFERENT EXPOSURES:

A. NORMAL EXPOSURE TIME
B. OVER-EXPOSE (1/4 MORE)
C. UNDER-EXPOSE (1/4 LESS)

NOTE: IF THE NORMAL EXPOSURE TIME WAS 16 SECONDS, THE OVER-EXPOSURE ONE WOULD BE AT 20 SECONDS AND THE UNDER-EXPOSURE WOULD BE AT 12 SECONDS.

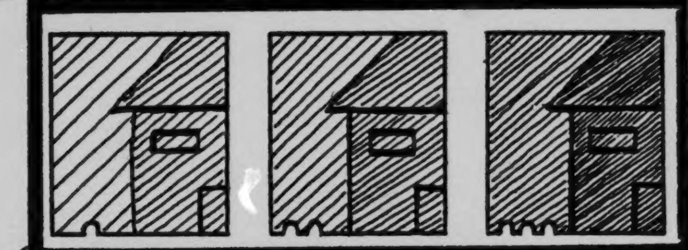
5. TO HELP IDENTIFY YOUR DIFFERENT EXPOSURE TIMES LATER, YOU MAY WANT TO PUNCH HOLES FOR A CODE ON THE EDGE OF EACH PIECE. →



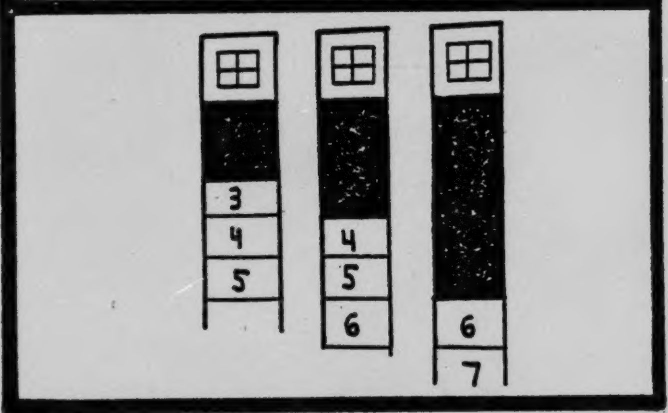
6. PLACE ALL THREE PIECES OF FILM INTO THE DEVELOPER TRAY AT THE SAME TIME (BE SURE THEY ARE EACH COVERED BY DEVELOPER FOR 2-3 SECONDS). TWO OR THREE SECONDS IS 012.

7. DEVELOP FOR EXACTLY 2 3/4 MINUTES AND CONTINUE PROCESSING AS NORMAL.

8. WHEN DRY, COMPARE THE REPRODUCTION QUALITY OF EACH PAPER SAMPLE (OR EACH KIND OF COPY) FOR EACH COLOR AND KIND OF MARKER.



9. COMPARE THE STEPS ON THE NUARC DEVELOPMENT GUIDE AND THE 12-STEP GRAY SCALE. USE A 10X POWER MAGNIFYING GLASS TO CHECK QUALITY. →



JOB STEPS

10. SAVE THESE THREE NEGATIVES. WHEN YOU FINISH THE NEXT MOD ON PROCESSING, YOUR INSTRUCTOR WILL CAREFULLY EXAMINE ALL OF THESE NEGATIVES AND ASK YOU SPECIFIC QUESTIONS ON REPRODUCTION AND QUALITY DIFFERENCES.

11. GO DIRECTLY ON WITH THE NEXT MODULE, #1401 10 006.

graphics

unit: CAMERA (PHOTOMECHANICAL REPRODUCTION)

capital area career center

module: 1401 10 006
1401 10 006 3 **date:** 10/77 **level:** III

skill title: FILM PROCESSING: REPRODUCTION AND QUALITY CONTROL

developed & written by: GLEN PETTIT

visuals by: DAVE BROWN

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WORD GUIDE

AGITATION - SHAKING UP

PERFORMANCE OBJECTIVE

YOU ARE GOING TO LEARN:

HOW DIFFERENT DEVELOPMENT TIMES AND AGITATION EFFECT THE REPRODUCTION OF DIFFERENT KINDS OF CAMERA COPY.

IN ORDER TO DO THIS YOU WILL NEED:

PROCESS CAMERA AND DARKROOM

ORTHO FILM AND CHEMICALS

VARIOUS KINDS OF COPY AND PAPERS

A QUIZ ON EXPOSURE AND PROCESSING

WE WILL KNOW YOU CAN DO IT WHEN:

1. YOU CAN JUDGE AND COMPARE REPRODUCTION QUALITY OF COPY WHEN OVER-OR UNDER-EXPOSED, OR OVER-OR UNDER-AGITATED.
2. YOU CAN DECIDE IF A CERTAIN TYPE OF COPY, PAPER OR IMAGING MATERIAL SHOULD HAVE THE DEVELOPMENT OR AGITATION CHANGED FROM NORMAL TO IMPROVE REPRODUCTION QUALITY.
3. YOU CAN PASS A QUIZ ON REPRODUCTION AND QUALITY CONTROL ON FILM EXPOSURE AND DEVELOPING WITH 100% ACCURACY.

A TAPE OF THIS MODULE IS AVAILABLE.

WORD GUIDE

CONSISTENT - STEADY

INFORMATION

ALL LARGE CHOPS THAT DO A LOT OF FILM PROCESSING ARE USING AUTOMATIC FILM PROCESSORS BECAUSE CONSISTANT QUALITY IN FILM PROCESSING IS SO IMPORTANT. YOU MUST MATCH YOUR PROCESSING CAREFULLY AND REPEAT YOUR PROCEDURE EXACTLY FOR EACH PIECE OF FILM.

WITH OUR A & B ORTHO DEVELOPER, WE FIND THAT WE NEED A MINIMUM OF 8 OZ. (250 ML) TO COVER THE FILM WHEN IT IS IN THE TRAY. THIS TOTAL OF 16 OZ. (1/2 LITER) IS ENOUGH TO PRECESS ABOUT FIVE SHEETS OF 10 X 12" ORTHO FILM IN A 1 HOUR PERIOD. IF YOU ARE USING SMALL PIECES OF FILM LIKE 10 X 12.5 CM (4" X 5", AS MOST OF THESE MODS CALL FOR), USE THE SMALL 5" X 7" DEVELOPING TRAYS WHICH ONLY NEED ABOUT 4 OZ EACH OF A & B DEVELOPER.

THE SLIDE/TAPE WILL COVER MIXING, USE AND DEVELOPING TIME WHEN USING FILM CHEMICALS.

JOB STEPS

1. WATCH AND LISTEN TO THE SLIDE/TAPE FROM GAFT CALLED "PHOTOGRAPHIC FILM PROCESSING".

2. TAKE ALL EQUIPMENT & MATERIALS TO YOUR WORK AREA.

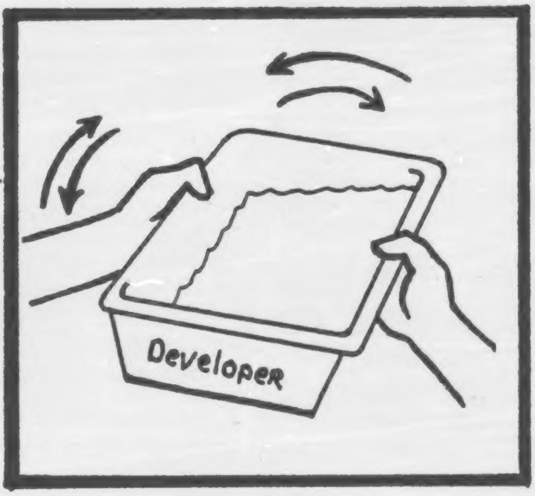
3. PLACE THE 'CAMERA COPY SAMPLE SHEET' THAT YOU HAVE USED IN THE LAST TWO MODS ON THE CAMERA. SET THE CAMERA FOR 50%.

4. MAKE FIVE SIMILAR EXPOSURES OF THE SAME COPY AT EXACTLY THE SAME NORMAL EXPOSURE TIME. FOR NOW, STORE THESE IN THE TRANSPORT BOX.

5. THE CORRECT WAY TO DEVELOP FILM IS TO SLOWLY ROCK THE TRAY FOR THE ENTIRE 2 3/4 MINUTES OF DEVELOPMENT.

A. ROCK ONCE FROM EACH SIDE EVERY FIVE SECONDS, SO IT TAKES 20 SECONDS TO ROCK ALL FOUR SIDES AT ONCE.

B. LIFT EACH SIDE OF THE TRAY 2 OR 3 CM AND LET DOWN SLOWLY. PRACTICE THIS.

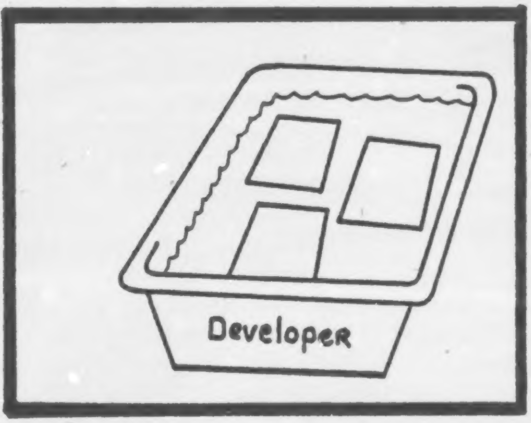


CAUTION: DO NOT LET THE DEVELOPER SPLASH OR GET BUBBLES IN IT, OR IT WILL RUIN MORE QUICKLY.

6. NOW YOU ARE READY TO PROCESS THREE PIECES OF THE FILM YOU JUST EXPOSED.

A. PLACE ALL THREE IN THE DEVELOPER AT ONCE, PROCESS AND ROCK THE TRAY AS NORMAL.

B. AT 2 MINUTES, REMOVE ONE PIECE TO THE STOP, THEN FIXER. AT



WORD GUIDE

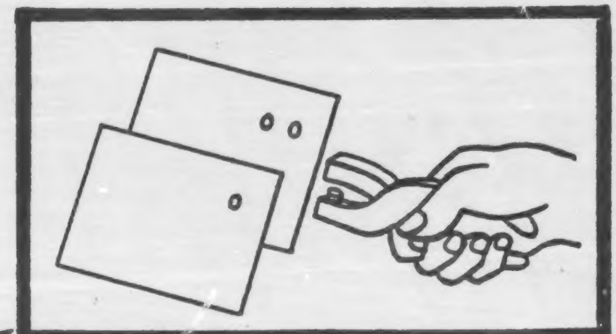
JOB STEPS

ROTATE - TURN AROUND

2 3/4 MINUTES, REMOVE ONE TO STOP THEN FIXER. REMOVE THE THIRD PIECE AT 3 1/2 MINUTES TO THE STOP BATH, THEN THE FIXER. YOU WILL HAVE ONE NORMAL DEVELOPED ONE UNDER-DEVELOPED AND ONE OVER-DEVELOPED.

NOTE: THE PIECES CAN MOVE AROUND IN THE TRAY. IT DOES NOT HURT TO HAVE 2 OR 3 PIECES ON TOP OF EACH OTHER, AS LONG AS YOU ROTATE THE FILM OR MOVE IT SEVERAL TIMES.

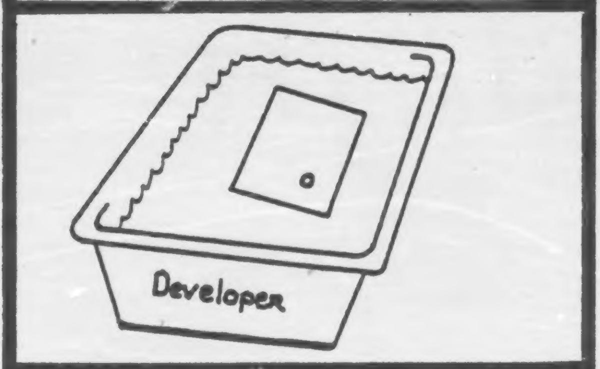
7. WITH THE TWO EXPOSED PIECES OF FILM LEFT, WE WILL COMPARE AGITATION. USE THE PUNCH TO CODE YOUR FILM SO YOU CAN EASILY TELL WHICH IS WHICH.



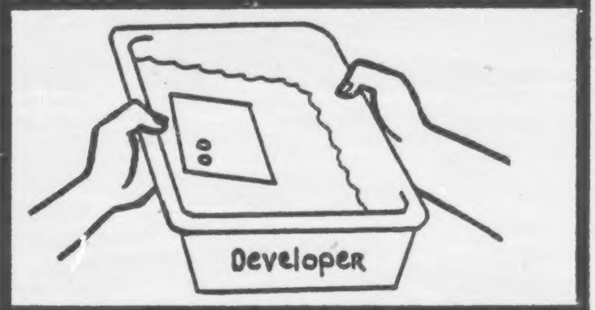
8. CAREFULLY PLACE ONE PIECE OF EXPOSED FILM IN THE DEVELOPER AND DO NOT ROCK.

A. LEAVE THE FILM IN THE DEVELOPER FOR EXACTLY 2 3/4 MINUTES WITH NO AGITATION (STILL DEVELOP).

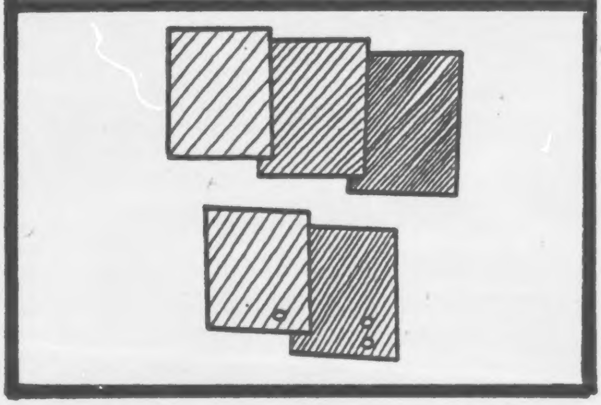
B. THEN PROCESS AS NORMAL.



9. PLACE THE LAST PIECE OF EXPOSED FILM IN THE DEVELOPER TRAY AND ROCK THE TRAY FOR THE ENTIRE 2 3/4 MINUTES. DO NOT STOP ROCKING; ROCK SEVERAL TIMES ON EACH SIDE, EVERY 2 OR 3 SECONDS. THEN FINISH PROCESSING AS NORMAL.



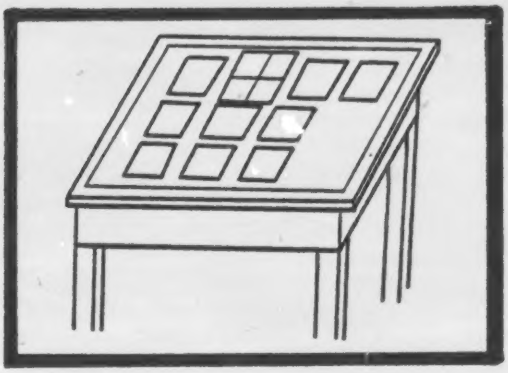
10. WHEN ALL 5 NEGATIVES ARE DRY, COMPARE YOUR RESULTS: WHAT HAPPENS WHEN YOU OVER-OR UNDER-DEVELOP? WHAT HAPPENS WHEN YOU OVER-OR UNDER-AGITATE?



11. GET TOGETHER ALL NINE NEGATIVES AND LAY THEM OUT ON A LIGHT TABLE.

1. NORMAL EXPOSURE (1401 10 004)
3. OVER & UNDER EXPOSURES (1401 10 005)

JOB STEPS



3. OVER & UNDER DEVELOPMENTS
2. OVER & NO AGITATION
PLUS YOUR ORIGINAL COPY

12. ARRANGE THESE ALL IN A LOGICAL ORDER IN GROUPS. STUDY THEM CAREFULLY. YOUR INSTRUCTOR WILL BE ASKING YOU SPECIFIC QUESTIONS ABOUT WHAT HAPPENS TO CERTAIN COLORS, TEXTURES, COPY, INKS AND PRINTING WHEN THEY ARE PROCESSED IN OTHER WAYS THAN THE NORMAL ONE.

13. TAKE THE ATTACHED SELF-QUIZ AND WRITE YOUR ANSWERS ON A SEPARATE SHEET OF PAPER. YOU SHOULD LOOK AT YOUR NEGATIVES FOR SOME OF THE QUESTIONS.

14. SHOW YOUR ANSWERS TO YOUR INSTRUCTOR.

15. ASK THE INSTRUCTOR TO CHECK ALL YOUR WORK FOR THESE LAST THREE MODULES.

SELF QUIZ

WRITE YOUR ANSWERS ON A SEPARATE SHEET OF PAPER.

1. WHERE DOES THE EXPOSED AREA ON FILM BECOME BLACK?

   A. IN THE CAMERA
   B. IN THE DEVELOPER
   C. IN THE STOP
   D. IN THE FIXER

2. WHERE DOES THE IMAGE AREA CLEAR ON THE NEGATIVE?

   A. IN THE CAMERA
   B. IN THE DEVELOPER
   C. IN THE STOP
   D. IN THE FIXER

3. WHERE DOES THE INVISIBLE (LATENT) IMAGE?

   A. IN THE CAMERA
   B. IN THE DEVELOPER
   C. IN THE STOP
   D. IN THE FIXER

4. MAKE A CHART LIKE THE ONE ON PAGE 8 OF THIS MODULE AND FILL IN THE BLANKS WITH A + (WILL REPRODUCE BETTER), - (WILL DROP OUT OR DISAPPEAR) OR A 0 (NO CHANGE) FOR EACH OF THE COLORS OR IMAGING MATERIALS.

   (SEE CHART ON NEXT PAGE)

SELF QUIZ

COLOR	NORMAL	OVER EXPOSURE	UNDER EXPOSURE	OVER DEVELOPMENT	UNDER DEVELOPMENT
RED					
BLUE					
YELLOW					
GREEN					
BLACK PENCIL					
TYPEWRITER (FABRIC)					
INK ON NEWSPRINT					
RED PENCIL					
RED BALLPOINT					
BLUE BALLPOINT					

5. TOO MUCH AGITATION WILL CAUSE THE ______ AREAS TO FILL IN AND REDUCE THE AMOUNT OF OPAQUE NEEDED.

6. USING EXPOSURE, WHAT WOULD YOU DO TO REDUCE PIN HOLES?

7. USING DEVELOPMENT TIME, HOW COULD YOU REDUCE PINHOLES?

8. ON THE 12-STEP GRAY SCALE, IF THE NEGATIVE HAS A SOLID STEP 6, NAME TWO POSSIBLE CAUSES.

9. IF YOU WERE GIVEN A LARGE, SOLID DRAWING DONE IN BOLD INDIA INK IN NEWSPRINT PAPER, WHAT WOULD YOU DO TO IMPROVE QUALITY IN REPRODUCTION?

10. IF YOU WERE GIVEN A PAGE TYPED WITH AN OLD, WEAK RIBBON ON A MANUAL TYPEWRITER, WHAT MUST YOU DO TO IMPROVE REPRODUCTION QUALITY?

SELF QUIZ

11. IF AN ARTIST DREW A PICTURE WITH A REFULAR SOFT PENCIL ON WHITE PAPER, WHAT MUST YOU DO TO REPRODUCE AND IMPROVE QUALITY?

12. WHICH LETS IN MORE LIGHT, F:8 OR F:11?

13. WHICH GIVES US MORE LIGHT, F:11 FOR 10 SECONDS OR F:16 FOR 15 SECONDS?

14. WHICH ONE OF THESE IS NOT EXACTLY THE SAME AMOUNT OF LIGHT AS THE OTHERS?

    A. F:8 FOR 10 SECONDS
    B. F:11 FOR 20 SECONDS
    C. F:22 FOR 30 SECONDS
    D. F:16 FOR 40 SECONDS

15. WHAT IS THE BEST COLOR PENCIL TO USE WHEN DRAWING GUIDE LINES ON PASTE UP'S AND COPY?

    A. BLACK
    B. BLUE
    C. RED
    D. SOFT BLACK

16. WHICH COLOR OF PAPER SHOULD NOT BE USED TO PASTE-UP ON (THE COLOR THAT WILL SHOW UP ON THE FILM)?

    A. PINK
    B. BLUE
    C. YELLOW
    D. GREEN

ANSWERS TO SELF QUIZ

1. B
2. D
3. A
4.
5. IMAGE
6. OVER EXPOSE
7. OVER DEVELOPMENT
8. OVER-EXPOSURE, OVER-DEVELOPMENT
9. OVER-EXPOSE OR OVER-DEVELOP
10. UNDER-EXPOSE, UNDER-DEVELOP, LESS AGITATION
11. UNDER-EXPOSE, UNDER DEVELOP, LESS AGITATION
12. F:8
13. F:11 FOR 10 SECONDS
14. C
15. B
16. A

graphics

unit: CAMERA (PHOTOMECHANICAL REPRODUCTION)

capital area career center

module: 1401 10 007
1401 10 007 3 **date:** 8/77 **level:** II

skill title: THE CAMERA OPTICAL SYSTEM AND F:STOPS

developed & written by: GLEN PETTIT

visuals by: MIKE SMITH

WORD GUIDE

ABERRATION - TO WANDER, NOT BE TRUE, DISTORT.

PERFORMANCE OBJECTIVE

YOU ARE GOING TO LEARN:

HOW THE CAMERA OPTICAL SYSTEM WORKS, HOW TO CHECK FOCUS AND LENS ABERRATION.

IN ORDER TO DO THIS YOU WILL NEED:

PROCESS CAMERA
DARKROOM & CHEMICALS
ORTHO FILM
A RULER
MAGNIFYING GLASS

WE WILL KNOW YOU CAN DO IT WHEN:

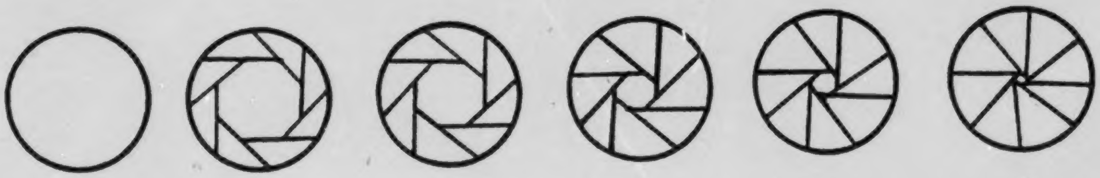
1. YOU UNDERSTAND THE BASIC OPTICAL SYSTEMS FOR ALL CAMERAS.
2. YOU CAN CHECK CENTER AND EDGE FOCUS ON THE GROUND GLASS WITH A MAGNIFYING GLASS.
3. YOU CAN CHECK LENS ABERRATION WITH AN EXPOSURE TEST AND DETECT ANY ERROR TO .003".

A TAPE OF THIS MODULE IS AVAILABLE.

INFORMATION

YOU WILL BE VIEWING A TECHNICAL SLIDE/TAPE ON THE PROCESS CAMERA OPTICAL SYSTEM.

THE F:STOP REFERS TO THE SIZE OF THE LENS OPENING. THE HIGHER THE F:STOP NUMBER, THE SMALLER THE OPENING.



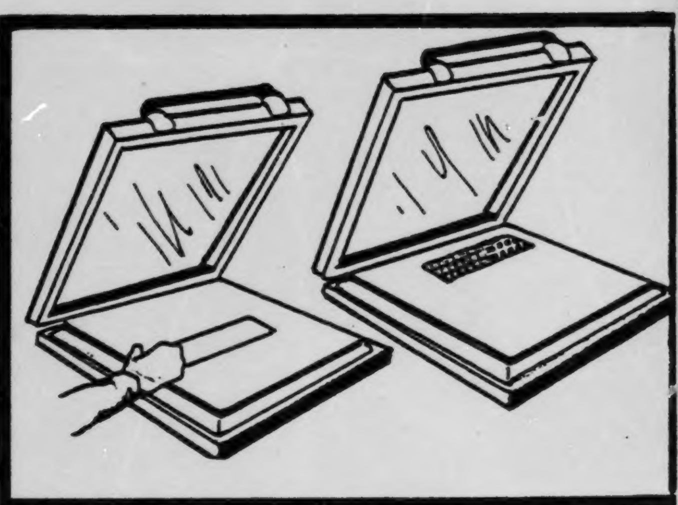
EACH F:STOP ON ANY LENS WILL LET IN 1/2 OR TWICE THE LIGHT AS THE NEXT F:STOP. FOR INSTANCE: F:11 IS TWICE AS LARGE AS F:16 AND 4-TIMES AS LARGE AS F:22. OUR NUARC PROCESS CAMERA HAS THE ABOVE SIX F:STOPS. REMEMBER THESE: OUR PROCESS CAMERA WILL AUTOMATICALLY COMPENSATE FOR A DIFFERENT PERCENTAGE CAMERA SETTINGS. WITH MOST CAMERAS THIS HAS TO BE DONE BY THE CAMERA PERSON (AS YOU WILL LEARN IN THE SLIDE/TAPE).

JOB STEPS

1. BE SURE YOU HAVE COMPLETED MOD 1401 10 006 "EXPOSURE DETERMINATION".

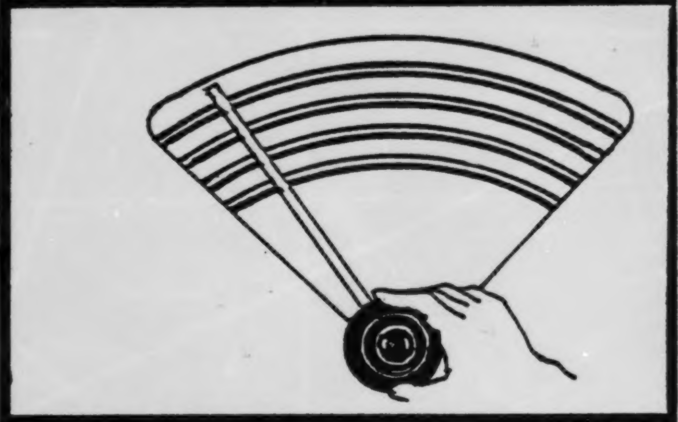
2. VIEW THE GATF SLIDE/TAPE "THE PROCESS CAMERA OPTICAL SYSTEM".

3. TO CHECK THE PROCESS CAMERA FOR FOCUS, PLACE A 12-STEP GRAY SCALE (CAMERA PERSON'S SENSITIVITY GUIDE) ON THE COPYBOARD NEAR THE CENTER. WITH A 10X MAGNIFYING GLASS, CHECK THE FINE LINE PATTERN FOR FOCUS AS SHOWN. DO THIS AT 100%, AT 25% AND 250%. DO NOT MAKE ANY ADJUSTMENTS.

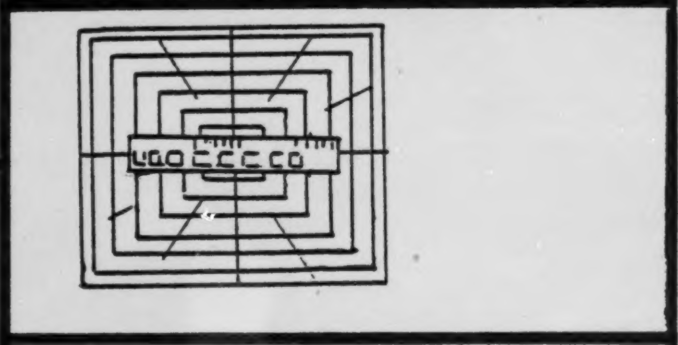


4. NOW CHECK FOR EDGE FOCUS BY PLACING THE GRAY SCALE IN EACH CORNER OF THE COPYBOARD AND CHECKING WITH THE 10X MAGNIFYING GLASS ON THE GROUND GLASS.

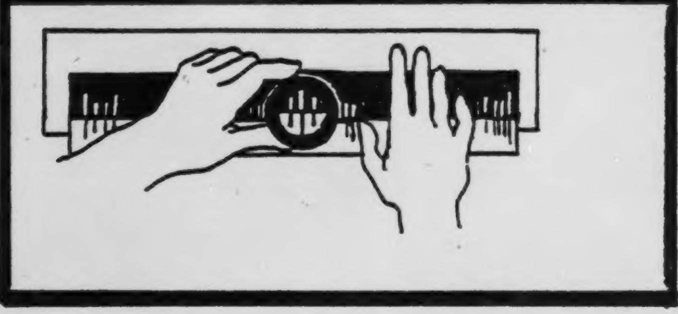
5. WITH THE GRAY SCALE (FINE LINE PATTERN) CENTERED, SET THE CAMERA LENS FOR DIFFERENT F:STOPS (F:5.6, 11, 32) TO SEE IF FOCUS IS CONSISTANT (YOU MUST HAVE THE CAMERA ON 'EXPOSURE' FOR THIS TEST, NOT FOCUS).



6. PLACE A LARGE RULER HORIZONTAL ON THE COPYBOARD WITH A GRAY SCALE. SET THE CAMERA FOR 100% AND DOUBLE CHECK FOCUS. MAKE A REGULAR EXPOSURE ON 10 X 25 CM LINE FILM. PROCESS AS NORMAL.



7. WHEN DRY, USE A MAGNIFYING GLASS TO COMPARE YOUR NEGATIVE WITH THE RULER (CUT THE NEGATIVE SO YOU CAN MATCH IT WITH THE RULER).



8. SHOW THIS NEGATIVE AND RULER (KEEP THE SAME RULER) TO YOUR INSTRUCTOR FOR EVALUATION AND CREDIT. BE PREPARED TO ANSWER AS TO WHERE (WHAT SETTING) THE CAMERA IS SLIGHTLY OUT OF FOCUS.

9. NOW DO THE SELF QUIZ.

JOB STEPS

SELF QUIZ:

USE A SEPARATE SHEET OF PAPER FOR YOUR ANSWERS. WHEN FINISHED, CHECK YOUR ANSWERS WITH THE CORRECT ONES ON PAGE 6 OF THIS MOD.

1. IF THE NORMAL EXPOSURE IS F:11 FOR 32 SECONDS, WHAT F:STOP WOULD YOU USE AT 16 SECONDS? AT 64 SECONDS?
2. WHAT HAPPENS WHEN YOU OPEN ONE STOP?
   A. CUT EXPOSURE IN HALF
   B. DOUBLE THE EXPOSURE
   C. NOTHING
3. LIST THREE EXPOSURE SETTINGS EQUAL TO F:11 AT 36 SECONDS.
4. IF WE CLOSE ONE STOP FROM F:8 AT 10 SECONDS, WHAT IS THE NEW EXPOSURE TIME TO GET AN EQUAL EXPOSURE?
5. LIST THE SIX F:STOPS WE HAVE ON OUR PROCESS CAMERA, STARTING WITH THE LARGEST ONE FIRST.
6. DEFINE FOCUS.
7. DEFINE ABERRATION.

10. CHECK YOUR ANSWERS.

ANSWERS

1. F:8 AND F:16
2. A
3. F:22 AT 144
   F:16 AT 72
   F:8 AT 18
   F:5.6 AT 9
4. 20 SECONDS
5. 5.6, 8, 11, 16, 22, 32
6. POINT WHERE SHARP IMAGE FORMS.
7. TO NOT BE ACCURATE, UNTRUE, NOT EXACT.

graphics

unit: CAMERA

capital area career center

1401 10 008
module: 1401 10 008 3 **date:** 1/78 **level:** III

skill title: PRODUCTION EXPERIENCE: PROCESSING NEGATIVES

developed & written by: GLEN PETTIT

visuals by:

PERFORMANCE OBJECTIVE

YOU ARE GOING TO LEARN:

HOW TO ORGANIZE, SET-UP, READ DIRECTIONS AND DO LIVE PRODUCTION IN PROCESSING LINE NEGATIVES.

AND IN ORDER TO DO THIS YOU WILL NEED:

SEVERAL PRODUCTION JOBS (AT LEAST 20 LARGE NEGATIVES)

PROCESS CAMERA AND DARKROOM

ORTHO FILM AND CHEMICALS

WE WILL KNOW YOU CAN DO IT WHEN:

YOU CAN SELECT THE BEST EXPOSURE AND DEVELOPMENT FOR THE GIVEN COPY TO PRODUCE SHARP, HIGH CONTRAST LINE NEGATIVE WITH MINIMUM OPAQUING.

YOU CAN PROCESS AND DEVELOP AT LEAST THREE NEGATIVES AT A TIME AND ORGANIZE YOUR PROCEDURE FOR MASS PROCESSING.

INFORMATION

YOU HAVE LEARNED HOW TO DETERMINE EXPOSURE AND WHAT THE PROCESSING VARIABLES ARE ON SMALL PIECES OF FILM. IN INDUSTRY YOU USE LARGE SHEETS OF FILM AND MUST PRODUCE A LOT OF WORK IN THE MINIMUM TIME.

IT SHOULD TAKE LESS THAN 1/2 HOUR TO SET THE CAMERA AND DARKROOM UP, SHOOT A NEGATIVE, PROCESS AND DRY IT AND CLEAN THE DARKROOM. THIS IS FAST BUT IT IS THE WAY INDUSTRY EXPECTS IT. THE SECRET IS TO DO SEVERAL THINGS AT ONCE:

-WHILE THE FILM IS EXPOSING, MIX DEVELOPER.

-WHILE DEVELOPING, MIX STOP AND FIX.

-RUSH WASHING AND USE A FILM DRIER.

IN SHOPS WHICH HAVE AN AUTOMATIC FILM PROCESSOR, THE TOTAL TIME MAY BE 4 OR 5 MINUTES FROM EXPOSURE TO DRY NEGATIVE.

MANY JOBS NEED TWO OR MORE NEGATIVES SHOT. YOU CAN SHOOT A NEGATIVE, PUT IT IN A TEMPORARY STORAGE BOX, SHOOT SOME MORE AND STORE THEM TOO. THIS WAY YOU CAN MAKE ALL YOUR SHOTS THEN GO TO THE PROCESSING SINK. PUT THE FIRST SHOT IN THE DEVELOPER TRAY, 15 SECONDS LATER THE SECOND SHOT, THEN 15 SECONDS LATER THE THIRD. AFTER 2 3/4 MINUTES THE FIRST NEGATIVE SHOULD BE DONE, 15 SECONDS LATER THE SECOND ONE, ETC. CHECK EACH ONE CAREFULLY.

REMEMBER, AS YOUR DEVELOPER GETS OLDER OR YOU PROCESS A LOT OF FILM, THE DEVELOPER WEAKENS AND THE DEVELOPMENT TAKES LONGER.

ALLOW AT LEAST 60ML (2 OZ) OF DEVELOPER PER SHEET OF FILM IF DONE IN LESS THAN 1/2 HOUR. BE SURE TO ROCK ONE SIDE OF THE TRAY EVERY 5 SECONDS AND DON'T LET THE FILM SIT TOO CLOSE TO OTHER FILM IN THE TRAY (BE SURE YOU SEE ALL 3 PIECES MOVING SEPARATELY, OR ROTATE THEM AT LEAST ONCE).

IF IT TAKES 2 3/4 MINUTES TO DEVELOP ONE SHEET, THEN YOU CAN PROCESS 3 IN ONLY 30 SECONDS MORE - IT IS MUCH FASTER TO "MASS" PROCESS FILM.

IF THE COPY IS SMALL ON THE COPYBOARD AND SEVERAL LINE SHOTS ARE THE SAME QUALITY AND SIZE, SHOOT AND PROCESS SEVERAL AT ONCE ON THE SAME FILM AND CUT APART WHEN DRY.

WITH LARGE FILM, HANDLE AND CARRY IT BY THE EDGES AND BE VERY CAREFUL WHERE YOU SET IT DOWN. REMEMBER, EACH SHEET COSTS $1.50, THAT'S WHY YOU'RE DOING PRODUCTION FOR THIS MODULE. YOU NEED TO PROCESS AND RECORD AT LEAST 20 LARGE SHEETS OF LINE FILM AND THEY MUST BE HIGH QUALITY LINE NEGATIVES.

graphics

unit: CAMERA (PHOTOMECHANICAL REPRODUCTION)

capital area career center

module: 1401 10 009
1401 10 009 3 **date:** 8/77 **level:** I

skill title: HOW TO MAKE POSITIVES AND NEGATIVES IN A CONTACT FRAME

developed & written by: GLEN PETTIT

visuals by: MIKE SMITH

WORD GUIDE

POSITIVE - BLACK IMAGE ON CLEAR FILM.

PERFORMANCE OBJECTIVE

YOU ARE GOING TO LEARN:

HOW TO MAKE CONTACT POSITIVES AND NEGATIVES IN A CONTACT FRAME.

IN ORDER TO DO THIS YOU WILL NEED:

DARKROOM AND CHEMICALS
A NEGATIVE
ORTHO FILM
VACUUM FRAME AND POINT LIGHT SOURCE

WE WILL KNOW YOU CAN DO IT WHEN:

1. YOU CAN CORRECTLY USE A VACUUM FRAME AND POINT LIGHT SOURCE TO MAKE A CONTACT POSITIVE OR CONTACT NEGATIVE.
2. THE CONTACT POSITIVE OR NEGATIVE IS EXACTLY THE SAME SIZE AS THE ORIGINAL NEGATIVE OR POSITIVE.
3. YOU WILL BE ABLE TO DETERMINE THE CORRECT EXPOSURE TIME FOR CONTACT POSITIVES OR NEGATIVES ON A CONTACT FRAME.

A TAPE OF THIS MODULE IS AVAILABLE.

WORD GUIDE

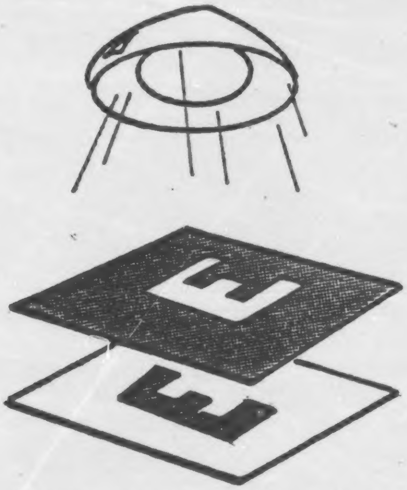
VACUUM FRAME - THE GLASS COVER WILL LOCK AND HOLD THE NEGATIVE AND FILM TOGETHER TIGHTLY (25# PER SQUARE INCH OF PRESSURE) DURING THE EXPOSURE.

POINT LIGHT SOURCE - THE LIGHT COMES FROM A SMALL POINT INSIDE THE BULB AND LAMP FOR A PERFECT SHARP IMAGE. THE LIGHT HAS A RHEOSTAT (VOLUME CONTROL) AND A TIMER CONTROL THAT WILL SHUT THE LIGHT OFF AUTOMATICALLY.

INFORMATION

THERE ARE MANY APPLICATIONS WHERE YOU WOULD WANT TO GET A POSITIVE FROM A NEGATIVE: COPY FOR A SCREEN STENCIL; BLACK PRINTER FOR COLOR-KEY; REVERSE LETTERING OR A STRIPPING TEMPLATE.

A POSITIVE IS A SOLID, DENSE, BLACK IMAGE ON A CLEAR FILM - THE OPPOSITE OF A NEGATIVE. TO MAKE A POSITIVE, WE PLACE A NEGATIVE ON TOP OF A PIECE OF UNEXPOSED FILM, AND EXPOSE. AS YOU KNOW, WHERE THE LIGHT STRIKES THE FILM, IT TURNS BLACK AFTER PROCESSING.



YOU CAN MAKE A POSITIVE BY JUST LAYING A NEGATIVE ON A PIECE OF FILM AND TURNING ON THE WHITE LIGHTS FOR A SECOND. TO GET THE BEST QUALITY, YOU NEED A VACUUM FRAME (TO HOLD THE NEGATIVE AND FILM TIGHTLY) AND A POINT LIGHT SOURCE.

VACUUM FRAME: WILL HOLD THE NEGATIVE EMULSION AND CONTACT PAPER EMULSION TIGHTLY TOGETHER (25# PRESSURE) DURING THE ENTIRE EXPOSURE. USE GLASS CLEANER TO KEEP BOTH SIDES OF THE GLASS CLEAN, AND CHECK THE GLASS EVERY TIME YOU USE IT. DUST WILL BLOCK OUT LIGHT.

INFORMATION

POINT LIGHT SOURCE: THE LIGHT COMES FROM A SMALL PIN POINT IN THE LAMP, WHICH WILL PRODUCE A PERFECT, SAME-SIZE CONTACT (BUT WILL CAUSE DUST TO SHOW, TOO). THE POINT LIGHT SHOULD BE AT LEAST A METER AWAY AND CAN BE CONTROLLED BY A RHEOSTAT. A RHEOSTAT CAN VARY THE BRIGHTNESS OF THE LIGHT (EACH # IS TWICE THE BRIGHTNESS OF THE LOWER #). THE TIMER CONTROL GIVES ACCURATE EXPOSURES AND SHUTS OFF THE LIGHT.

IN ADDITION TO CONTACT PRINTS, YOU CAN REVERSE (FLOP) AN IMAGE, SCREEN AN IMAGE, COMBINE SEVERAL NEGATIVES ON ONE CONTACT, CREATE SPECIAL EFFECTS, CAUSE FLATTER (SPREAD), OR THIN (CHOKE) THE IMAGE. FILM CAN BE USED IN CONTACTING TO MAKE POSITIVES FROM NEGATIVES.

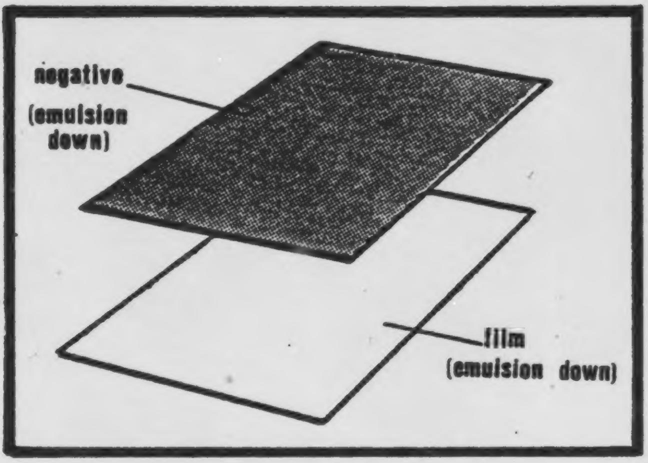
TO MAKE A CONTACT NEGATIVE, YOU NEED A POSITIVE. REMEMBER, IT IS WHERE THE LIGHT PASSES AND STRIKES THE FILM THAT TURNS BLACK AFTER PROCESSING.

JOB STEPS

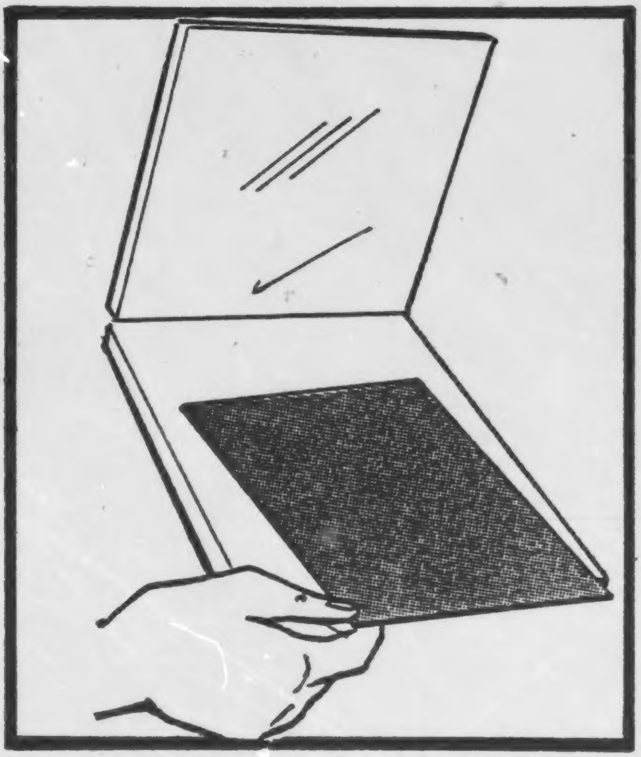
1. FIRST, COMPLETE THE BASIC LINE NEGATIVE MODS SO YOU KNOW HOW TO PROCESS FILM.

2. TAKE ALL EQUIPMENT & MATERIALS TO YOUR WORK AREA.

3. TAKE ONE OF YOUR GOOD LINE NEGATIVES FROM MOD 1401 10 002 AND OPAQUE-OUT ANY UNWANTED PIN HOLES. TO DO THIS, GET A 10 X 12.5 CM PIECE OF ORTHO FILM AND PLACE IT UNDER YOUR NEGATIVE WITH THE EMULSION DOWN ON BOTH PIECES.

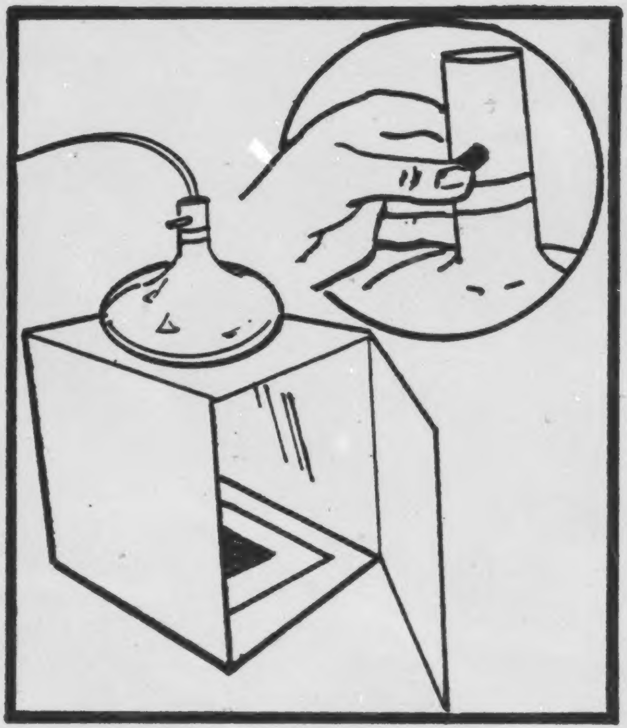


4. PLACE THE NEGATIVE AND FILM INTO A 35 MM CONTACT PROOF PRINTER AND PLACE THAT INTO THE CARDBOARD CONTACT PRINTER.



JOB STEPS

5. CLOSE THE DOOR AND TURN ON THE OVERHEAD LIGHT FOR 2 SECONDS.



6. REMOVE THE FILM AND DEVELOP FOR 2 3/4 MINUTES IN REGULAR ORTHO DEVELOPER.

7. THEN, PROCESS THE FILM AS NORMAL.

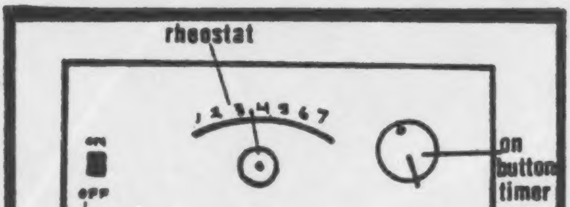
NOTE: YOU SHOULD HAVE SIZE-FOR-SIZE POSITIVE THAT IS FAIRLY SHARP, DENSE, AND WITHOUT ANY PINHOLES.

8. USE A 10X MAGNIFYING GLASS, AND CHECK FOR THE FURRY EDGES.

9. TO MAKE HIGH QUALITY CONTACT POSITIVES THAT CAN BE USED FOR OFFSET LITHOGRAPHY, YOU MUST USE A VACUUM FRAME AND POINT LIGHT SOURCE.

A. TAKE OUT THE VACUUM FRAME AND PLACE IT ON THE COUNTER. BE SURE THE GLASS IS CLEAN.

B. CHECK THE POINT LIGHT SOURCE: TURN ON THE SWITCH, SET THE TIMER, PUSH IN THE START BUTTON, AND ADJUST THE RHEOSTAT TO CHECK BRIGHTNESS WHILE THE LIGHT IS ON.

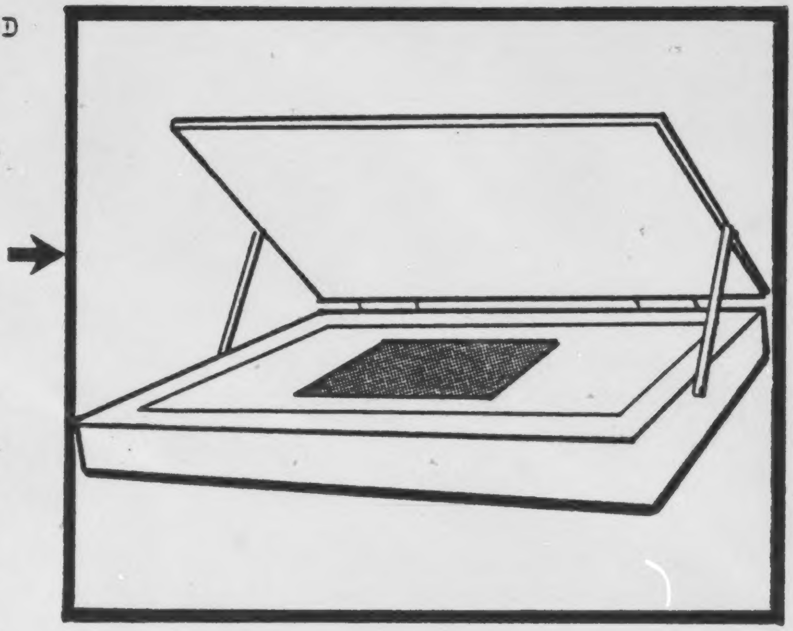


JOB STEPS

C. CLOSE THE BLOCK CURTAIN BEHIND THE VACUUM FRAME.

10. CHECK THE EXPOSURE CHART FOR THE CORRECT EXPOSURE TIME FOR FILM POSITIVES.

11. SET THE RHEOSTAT AND TIMER AND PLACE YOUR NEGATIVE ON TOP OF ANOTHER PIECE OF 10 X 12.5 CM ORTHO FILM (EMULSION DOWN FOR BOTH). THEN, PLACE THESE IN THE VACUUM FRAME.

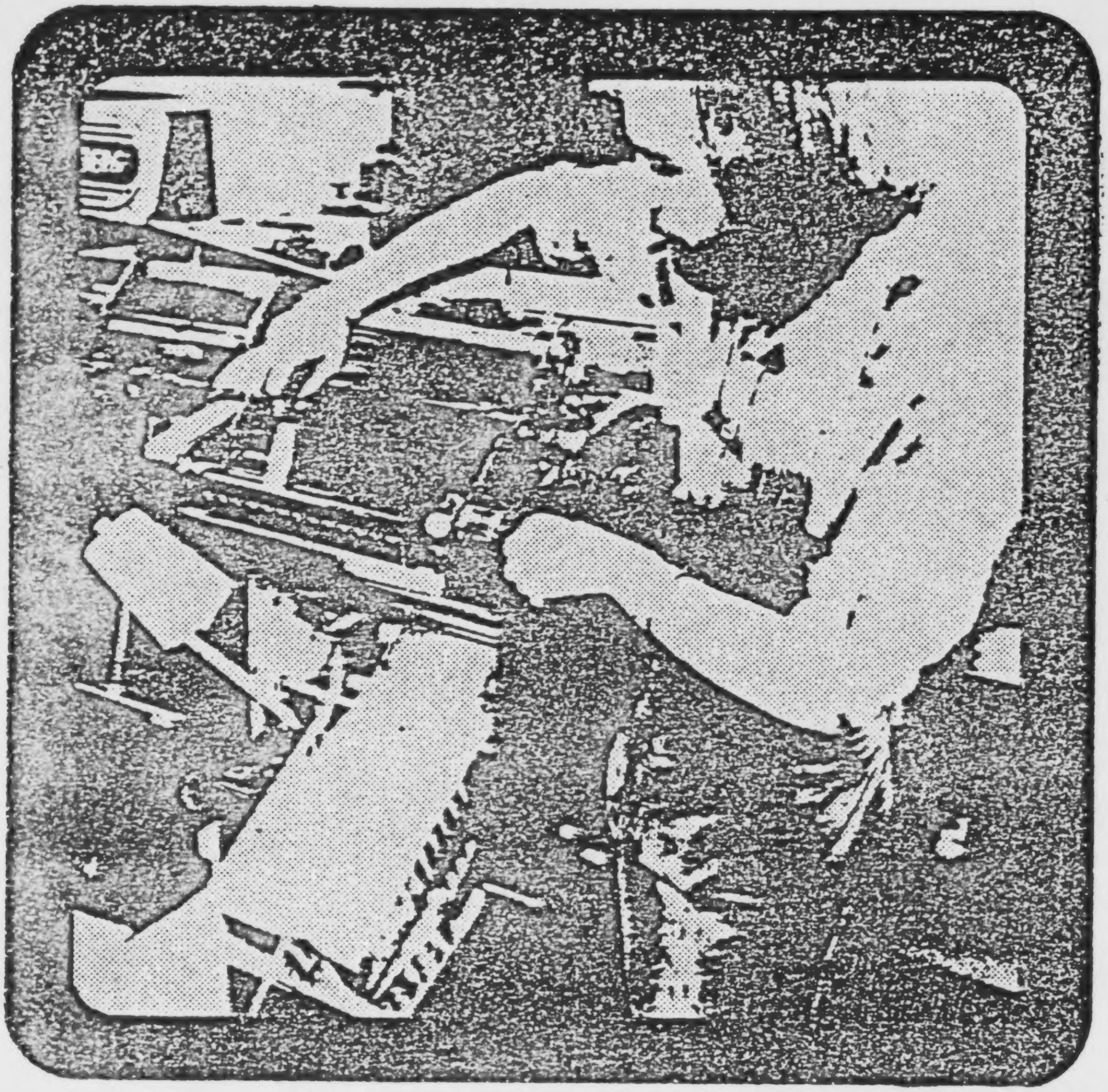


12. TURN ON THE VACUUM PUMP AND, WHEN THE GAUGE REACHES 25#, PUSH THE START BUTTOM TO EXPOSE.

13. AFTER EXPOSURE, PROCESS THE FILM AS NORMAL.

14. USING A 10X MAGNIFYING GLASS, CHECK FOR SHARP CONTACT ON THE IMAGE EDGES.

15. WHEN FINISHED, SHOW YOUR 2 CONTACT POSITIVES TO YOUR INSTRUCTOR FOR EVALUATION AND CREDIT.



graphics

unit: CAMERA (PHOTOMECHANICAL REPRODUCTION)

capital area career center

1401 10 010

module: 1401 10 010 3 **date:** 7/77 **level:** II

skill title: HOW TO USE PHOTOMECHANICAL TRANSFER (PMT) MATERIALS

developed & written by: GLEN PETTIT

visuals by: MIKE SMITH

WORD GUIDE

ACTIVATOR - A SPECIAL CHEMICAL THAT WILL SOFTEN THE UNEXPOSED PARTS OF THE RECEIVER SHEET.

PROCESSOR - A ONE-TRAY MACHINE WITH 2 ROLLERS THAT GENTLY SQUEEZE TOGETHER THE PMT MATERIALS.

PERFORMANCE OBJECTIVE

YOU ARE GOING TO LEARN:

HOW TO EXPOSE, ACTIVATE IN A PROCESSOR AND STRIP APART THE PMT NEGATIVE AND RECEIVER MATERIALS.

AND IN ORDER TO DO THIS YOU WILL NEED:

PMT NEGATIVE PAPER
PMT RECEIVER PAPER
PROCESSOR WITH ACTIVATOR
PROCESS CAMERA
LINE COPY

WE WILL KNOW YOU CAN DO IT WHEN:

YOU CAN EXPOSE, PROCESS AND STRIP APART PMT MATERIALS WITH EQUAL OR BETTER QUALITY THAN THE ORIGINAL, USING A PROCESS CAMERA AND AVERAGING LESS THAN 5 MINUTES PER SHOT.

A TAPE OF THIS MODULE IS AVAILABLE.

INFORMATION

PMT STANDS FOR KODAK PHOTOMECHANICAL TRANSFER. IT IS A METHOD FOR MAKING HIGH QUALITY BLACK ON WHITE POSITIVE PRINTS QUICKLY. THERE ARE MANY OTHER COMPANIES THAT MAKE A PRODUCT JUST LIKE THE KODAK PMT, BUT BECAUSE KODAK IS SO BIG AND WAS FIRST, ALMOST EVERYONE IN PRINTING AND COMMERCIAL ART CALLS ALL THESE OTHER BRANDS "PMT". THE CORRECT NAME OF THE PROCESS IS "DIFFUSION-TRANSFER". THERE ARE 3 STEPS TO MAKE A PMT PRINT:

(1) EXPOSE ON A PROCESS CAMERA

(2) PROCESS IN A SPECIAL PROCESSOR

(3) STRIP PEEL APART THE NEGATIVE AND RECEIVER PAPERS

A PMT PRINT CAN BE MADE ANY SIZE. IT CAN BE ENLARGED OR REDUCED AS FAR AS A PROCESS CAMERA CAN GO. IT DRIES QUICKLY AND CAN BE SHOT ON THE CAMERA IN MINUTES.

QUALITY AND DETAIL ARE LOST ON ENLARGEMENTS, ESPECIALLY THOSE OVER 300%. PASTE-UP LINES, SCRATCHES AND DUST WILL DROP OUT AND WEAK COPY IS USUALLY DARKENED. PMT IS CALLED HIGH-CONTRAST BECAUSE THE LIGHT GRAYS BECOME WHITE AND THE DARKER GRAYS BECOME BLACK. EVERYTHING IS EITHER BLACK OR WHITE.

NEARLY EVERY SHOP WITH A PROCESS CAMERA WILL USE A DIFFUSION-TRANSFER PRODUCT LIKE PMT. PMT CAME OUT IN THE MID-SIXTIES. BEFORE PMT, A PRINTER HAD TO MAKE A FILM NEGATIVE, THEN PROCESS, DRY AND MAKE A CONTACT PRINT EXPOSURE; THEN AGAIN PROCESS AND DRY. THIS TOOK ABOUT AN HOUR AND COST A LOT. TODAY WITH PMT, THE COST IS 1/10TH AND THE TIME IS ONLY ABOUT 4 - 5 MINUTES.

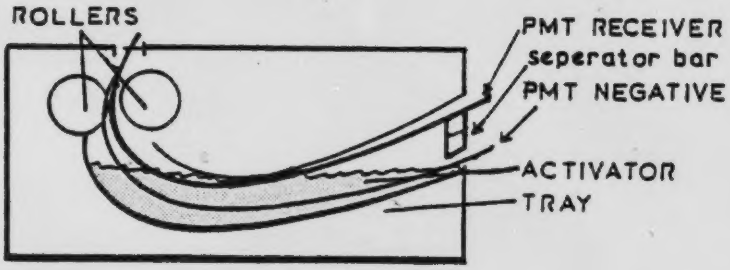
IN THE NEXT MOD (1401 10 011), YOU WILL LEARN ABOUT SOME "TRICKS" THAT CAN BE DONE WITH PMT.

PMT MATERIALS MUST BE USED IN THE DARKROOM UNDER THE #1A (LIGHT RED) SAFELIGHT. WATER, GREASE, OIL, FINGER-PRINTS AND SCRATCHES WILL DAMAGE PMT MATERIALS. BE SURE YOU HAVE THE CORRECT BOX AND KEEP THEM COVERED AND PROTECTED.

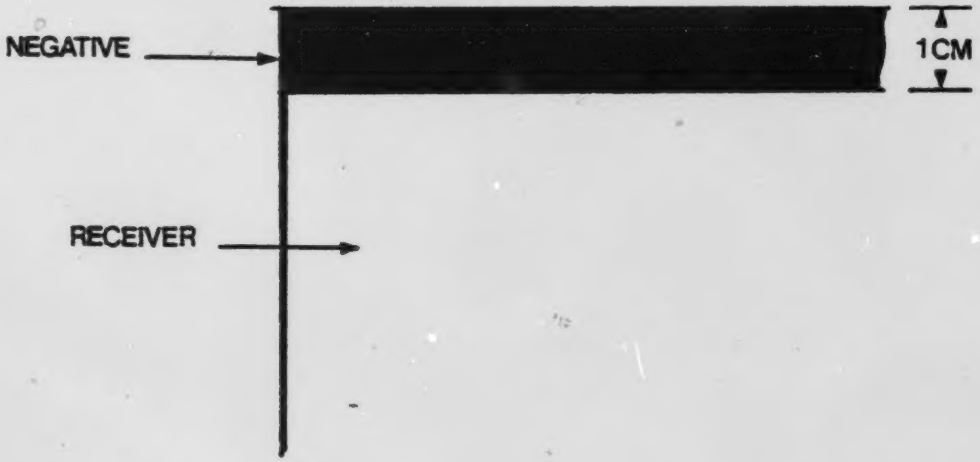
YOU WILL BE USING TWO MATERIALS: NEGATIVE AND RECEIVER SHEETS. THE NEGATIVE MATERIAL IS DARK ON THE EMULSION SIDE (THE SIDE THAT IS EXPOSED) AND WHITE ON THE BASE (BACK SIDE). THE RECEIVER SHEET IS WHITE ON BOTH SIDES. THE NAME OF THE MANUFACTURER IS PRINTED ON THE BASE SIDE IN A LIGHT GRAY INK.

INFORMATION

ALL PMT MATERIAL MUST BE AT LEAST 25 CM LONG (10"). IT HAS TO GO INTO THE PROCESSOR, UNDER THE ACTIVATOR, AND TO THE ROLLERS.



THE WIDTH OF THE PMT MATERIAL IS NOT AS IMPORTANT. IT IS HARD TO CONTROL LESS THAN 8 CM WIDE. THE NEGATIVE MUST BE 1 CM AHEAD OF THE RECEIVER TO START, BECAUSE IT HAS FURTHER TO GO IN THE TRAY.



JOB STEPS

1. YOU SHOULD HAVE COMPLETED THESE MODS:

   1401 10 001 - PHOTOMECHANICAL ORIENTATION

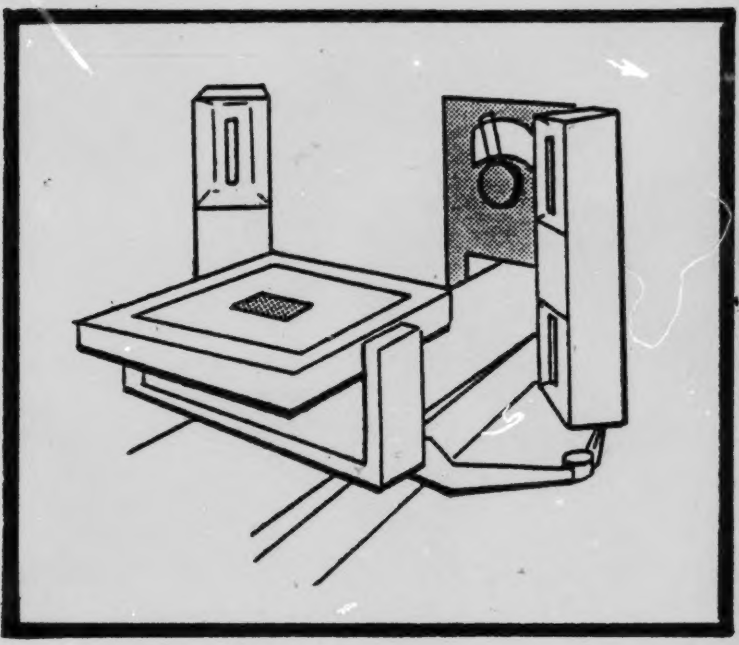
   1401 10 002 - MAKING A LINE SHOT

   1401 10 003 - ENLARGEMENT & REDUCTION

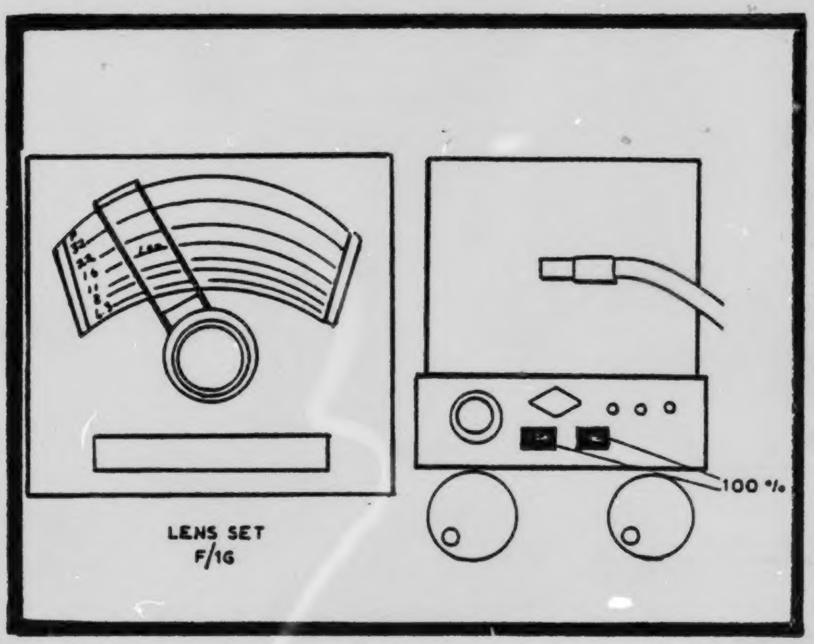
   YOU MAY WANT TO REVIEW THESE. CHECK WITH YOUR INSTRUCTOR IF YOU HAVE ANY QUESTIONS.

2. SELECT A PIECE OF LINE COPY (ADVERTISEMENT FROM A MAGAZINE OR A CARTOON) THAT IS ABOUT THE SIZE OF A POSTCARD, 8 X 12 CM (3X5").

3. CENTER YOUR COPY ON THE COPYBOARD.

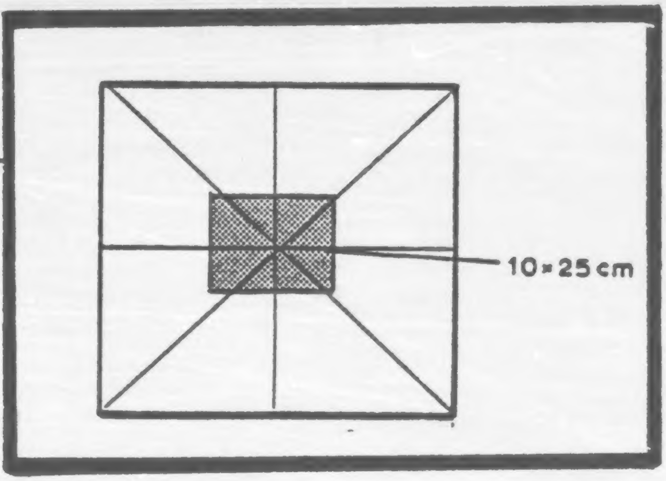


4. SET THE LENS AT F:16 FOR 100%. SET THE COPYBOARD AND LENS BOARD SCALES AT 100%. SET THE TIMER, THEN CHECK THE EXPOSURE CHART ON THE DARKROOM WALL FOR THE CORRECT EXPOSURE TIME.

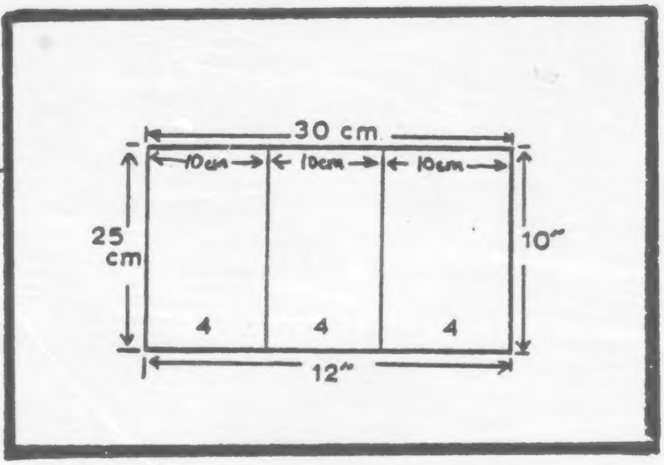


JOB STEPS

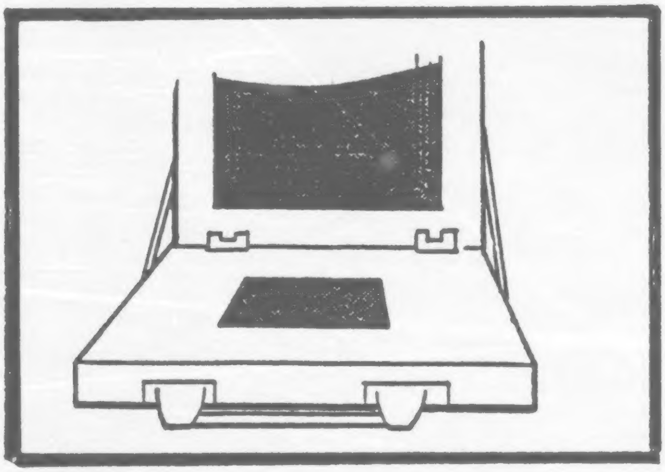
5. CHECK FOCUS ON THE GROUND GLASS. THE IMAGE MUST EASILY FIT ON A 10 X 25 CM (4" X 10") PIECE OF PMT MATERIAL.



6. UNDER THE RED SAFELIGHT, GET A 10 X 25 CM (4" X 10") PIECE OF NEGATIVE MATERIAL. YOU MAY HAVE TO CUT DOWN A LARGER SHEET. YOU CAN CUT 3 PIECES FROM A LARGER SHEET. IF THERE IS NO SPOILAGE. SEE DRAWING. BE SURE TO CUT THE NEGATIVE WITH THE DARK EMULSION UP SO YOU DON'T SCRATCH THE MATERIAL.

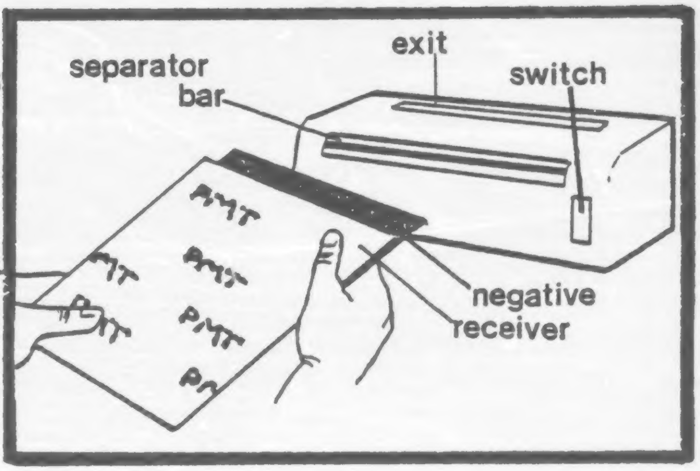


7. CENTER THE NEGATIVE MATERIAL WITH THE DARK EMULSION SIDE UP, ON THE VACUUM BACK. CLOSE AND MAKE YOUR EXPOSURE.



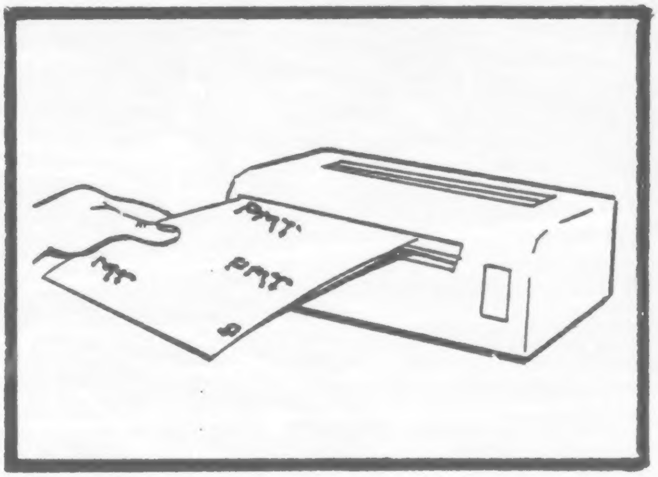
JOB STEPS

8. REMOVE THE NEGATIVE WHEN EXPOSED. NOW GET A PIECE OF RECEIVER MATERIAL THAT IS EXACTLY THE SAME SIZE, 10 X 25 CM. CHECK TO BE SURE YOU CAN KNOW WHICH IS THE BASE AND WHICH IS THE EMULSION SIDE. THE BASE SIDE HAS THE LIGHT PRINTING ON IT.

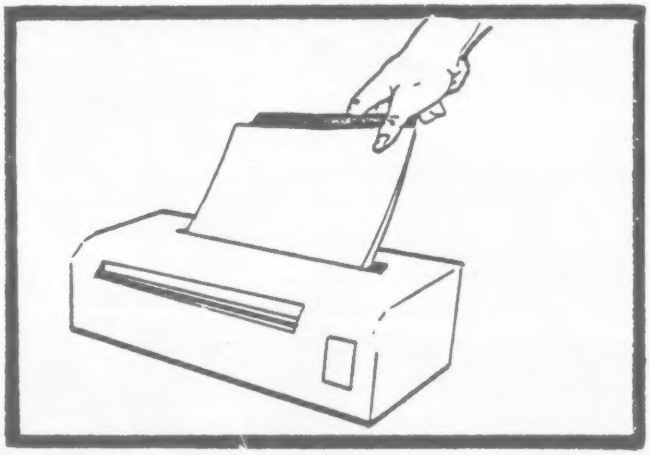


9. PLACE THE DARK NEGATIVE EMULSION SIDE UP. PUT THE RECEIVER ON TOP OF THE NEGATIVE WITH THE EMULSION SIDE DOWN. CAN YOU READ THE PRINTING? ADVANCE THE LOWER NEGATIVE ONE CENTIMETER SO IT GOES INTO THE PROCESSOR FIRST. HOLD THESE SHEETS TIGHTLY ON THE TAIL OR BACK END, AS SHOWN.

10. HOLDING THESE SHEETS TIGHTLY, PLACE THEM INTO THE PROCESSOR. PUT THE NEGATIVE IN FIRST BELOW THE SEPARATOR BAR. PUT THE RECEIVER ABOVE THE BAR. GENTLY PUSH THE SHEETS INTO THE PROCESSOR AT THE RATE OF 3 CM PER SECOND (1" PER SECOND). THE NEGATIVE AND RECEIVER WILL BE SQUEEZED TOGETHER AFTER THEY HAVE GONE THROUGH THE ACTIVATOR INSIDE THE PROCESSOR. YOU MUST HOLD THE 2 SHEETS TOGETHER AND GENTLY KEEP PUSHING FOR ABOUT 20 CM (8"). THEN THE ROLLERS INSIDE THE PROCESSOR TAKES OVER.

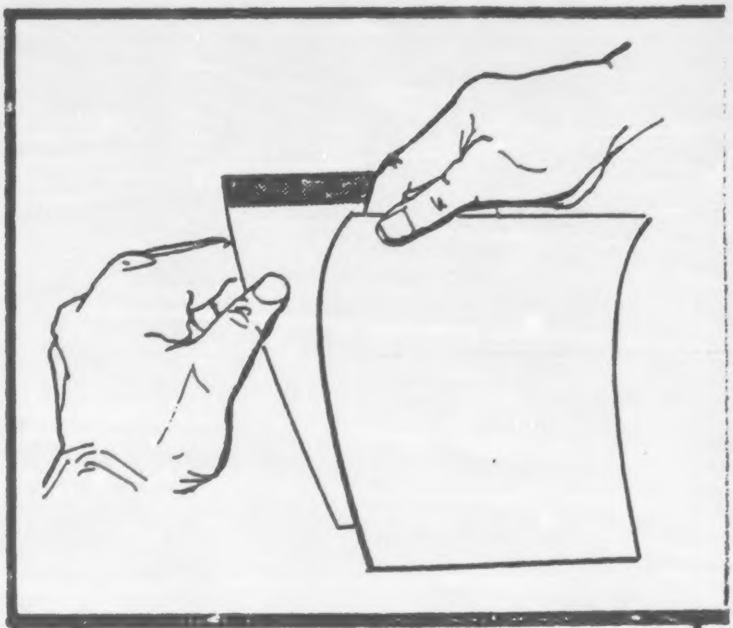


11. AS THE NEGATIVE AND RECEIVER COME OUT OF THE TOP OF THE PROCESSOR, DON'T PULL THEN. GENTLY GUIDE THEM OUT SO THEY DO NOT BEND. WHEN THE SHEETS ARE ALL OUT, CHECK THE CLOCK FOR TIME.

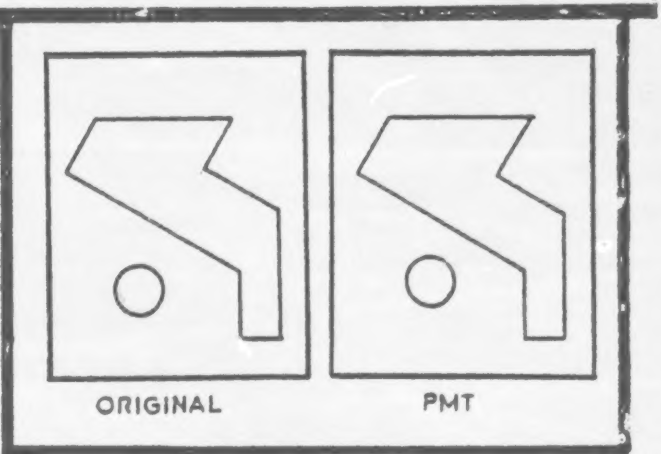


JOB STEPS

12. LEAVE THE NEGATIVE AND RECEIVER TOGETHER FOR 45 SECONDS. THEN SLOWLY STRIP THE TWO SHEETS APART AT THE SAME RATE THAT THEY COME OUT OF THE PROCESSOR.

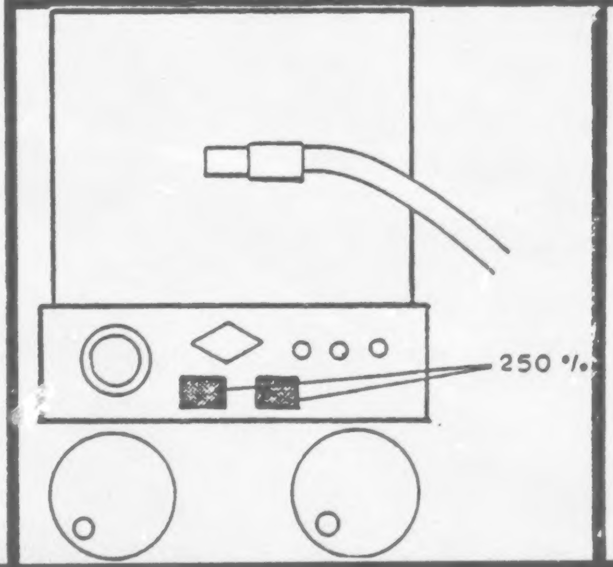


13. THROW AWAY THE NEGATIVE. COMPARE YOUR PMT PRINT WITH YOUR ORIGINAL. YOUR PMT PRINT SHOULD LOOK AT LEAST AS GOOD AS THE ORIGINAL, WITH NO UNWANTED MARKS.



14. NOW LETS TRY AN ENLARGEMENT AND A REDUCTION WITH PMT MATERIAL. LEAVE YOUR COPY ON THE PROCESS CAMERA. SET THE CAMERA FOR 250% (THREE SETTINGS OR SCALES).

15. GET ANOTHER PIECE OF 10 X 25 CM NEGATIVE MATERIAL. THIS TIME YOU ARE GOING TO MAKE 2 EXPOSURES ON THE SAME PIECE.



JOB STEPS

16. POSITION THE NEGATIVE MATERIAL AS SHOWN, SO ONLY 1/2 WILL BE EXPOSED. COVER THE OTHER 1/2 WITH CARDBOARD SO IT WILL NOT BE EXPOSED.

17. MAKE YOUR EXPOSURE AT 250% FOR THE CORRECT TIME. DO NOT TURN OFF THE VACUUM YET.

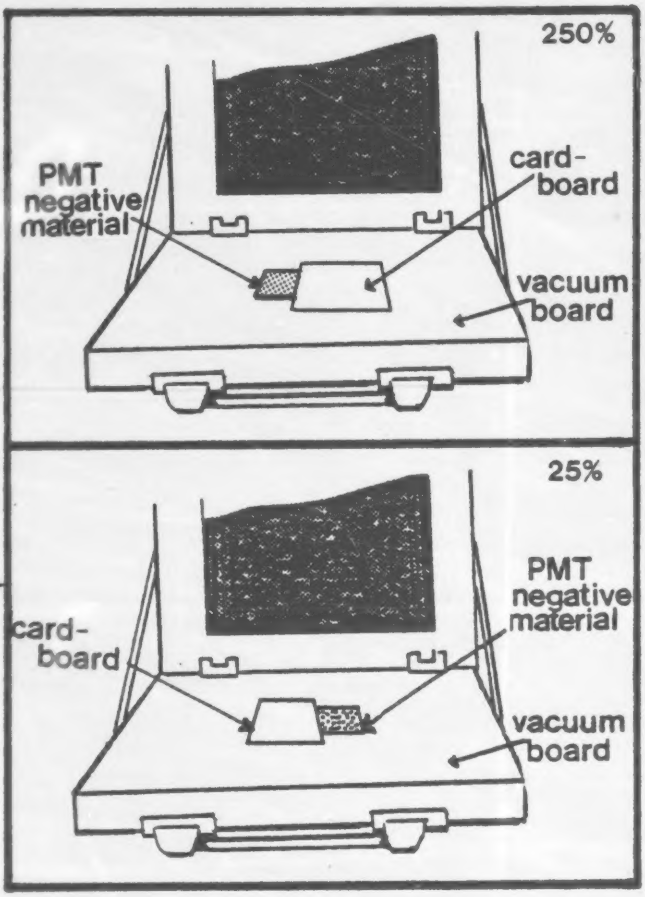
18. WITH THE VACUUM STILL ON, COVER THE HALF YOU JUST EXPOSED AT 250% WITH CARDBOARD. UNCOVER THE UNEXPOSED HALF SO IT MAY BE SHOT.

19. RE-SET THE CAMERA FOR 25% (ALL THREE SETTINGS) AND MAKE AN EXPOSURE AT THIS REDUCTION. NOW YOU HAVE 2 EXPOSURES ON ONE PI PIECE OF PMT MATERIAL.

20. GET A PIECE OF 10 X 25 CM PMT RECEIVER AND PROCESS THIS EXPOSURE TEST THROUGH THE PROCESSOR. COMPARE THE DETAIL QUALITY.

21. REMOVE YOUR COPY FROM THE COPY-BOARD. TAKE THE SELF-QUIZ ON TH THE NEXT PAGE.

22. SHOW BOTH PMT'S AND YOUR COPY TO YOUR INSTRUCTOR FOR CREDIT. SAVE THESE TWO PRINTS FOR USE IN MOD 1401 10 012 "EXPOSURE AND QUALITY CONTROL WITH PMT MATERIALS".



SELF-QUIZ ANSWERS:
1. A
2. C
3. C
4. B
5. C
6. A
7. NO GRAYS, ONLY BLACK AND WHITE
8. EXPOSE, PROCESS, STRIP
9. WATER, GREASE-OIL, FINGERPRINTS, SCRATCHES, WHITE LIGHT

SELF QUIZ - WRITE YOUR ANSWERS ON A SHEET OF PAPER. CHECK YOUR ANSWERS ON THE BOTTOM OF THE PAGE BEFORE THIS.

1. WHICH SIDE OF THE PMT MATERIAL IS EXPOSED ON THE CAMERA?
   A - NEGATIVE EMULSION
   B - NEGATIVE BASE
   C - RECEIVER EMULSION
   D - RECEIVER BASE

2. WHICH SIDE OF THE PMT MATERIAL ENDS UP WITH THE PRINT ON IT?
   A - NEGATIVE EMULSION
   B - NEGATIVE BASE
   C - RECEIVER EMULSION
   D - RECEIVER BASE

3. HOW LONG SHOULD THE PMT MATERIALS BE LEFT TOGETHER BEFORE STRIPPING?
   A - 5 SECONDS
   B - 20 SECONDS
   C - 45 SECONDS
   D - 90 SECONDS

4. WHICH WILL IMPROVE DETAIL QUALITY ON A PMT?
   A - ENLARGEMENT
   B - REDUCTION

5. PMT MATERIALS ARE A ____________ CONTRAST PHOTO PRODUCT.
   A - LOW
   B - MEDIUM
   C - HIGH
   D - CONTINUOUS

6. PMT MATERIALS SHOULD BE USED UNDER ____________ LIGHT.
   A - RED
   B - YELLOW
   C - WHITE
   D - BLACK

7. WHAT DOES HIGH-CONTRAST MEAN? ____.

8. WHAT ARE THE 3 STEPS TO MAKE A PMT? ____________, ____________, ____________.

9. NAME AT LEAST 4 THINGS THAT CAN DAMAGE PMT MATERIAL IN THE DARKROOM: ____________, ____________, ____________, ____________.

graphics

unit: CAMERA (PHOTOMECHANICAL REPRODUCTION)

capital area career center

module: 1401 10 011
1401 10 011 3 **date:** 8/77 **level:** III

skill title: HOW TO CLEAN & MAINTAIN A DIFFUSION - TRANSFER PROCESSOR

developed & written by: GLEN PETTIT

visuals by: MIKE SMITH

PERFORMANCE OBJECTIVE

YOU ARE GOING TO LEARN:

HOW TO CHECK ACTIVATOR LEVEL, MAINTAIN AND CLEAN A DIFFUSION - TRANSFER PROCESSOR.

IN ORDER TO DO THIS YOU WILL NEED:

DIFFUSION-TRANSFER PROCESSOR

ACTIVATOR

TRAY CLEANER & SPONGE

WE WILL KNOW YOU CAN DO IT WHEN:

1. YOU CAN CHECK & REPLENISH THE ACTIVATOR IN THE DIFFUSION - TRANSFER PROCESSOR.
2. YOU CAN CLEAN, ASSEMBLE, AND REFILL A DIFFUSION-TRANSFER PROCESSOR.

A TAPE OF THIS MODULE IS AVAILABLE.

WORD GUIDE

EXPIRED - DEAD, NO LONGER ACTIVE.

INFORMATION

ALL MACHINES NEED TO BE CHECKED, MAINTAINED, AND CLEANED REGULARLY. JUST LIKE A CAR, THE DIFFUSION - TRANSFER PROCESSOR MUST BE MAINTAINED REGULARLY.

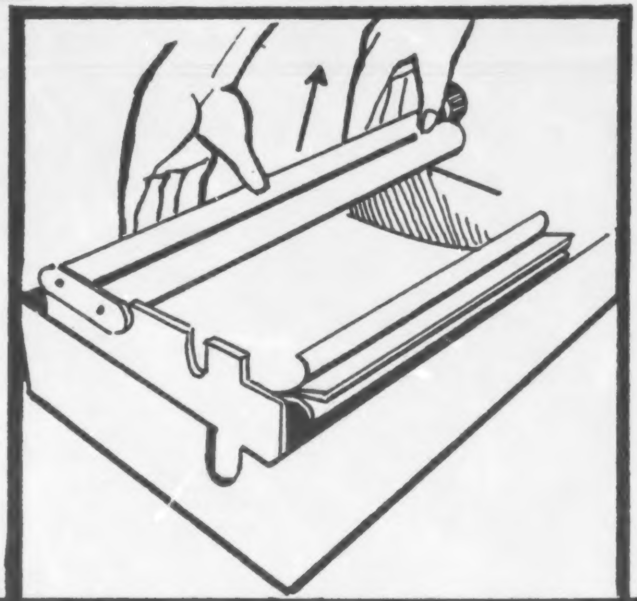
EVERY DAY THE ROLLER ASSEMBLY MUST BE WASHED AND DRIED TO REMOVE THE DRIED ACTIVATOR CRYSTALS. THESE CRYSTALS ARE LIKE SAND. IF THESE ARE NOT REMOVED, THEY WILL CAUSE THE SOFT ROLLERS TO WEAR OUT AND WILL PREVENT A TIGHT SQUEEZE BETWEEN THE NEGATIVE AND RECEIVER PAPER.

EVERY FRIDAY, OR WHEN THE ACTIVATOR BECOMES EXPIRED, THE ENTIRE PROCESSOR MUST BE CLEANED. OUR PROCESSOR WILL HOLD ABOUT 1 LITER OF ACTIVATOR (COST IS ABOUT $4 PER LITER) WHICH IS ENOUGH TO PROCESS ABOUT 50 FULL SHEETS OF NEGATIVE AND RECEIVER MATERIAL. WHEN THE ACTIVATOR IS OLD, THE IMAGE AREA ON THE RECEIVER BECOMES A MUDDY BROWN IN COLOR.

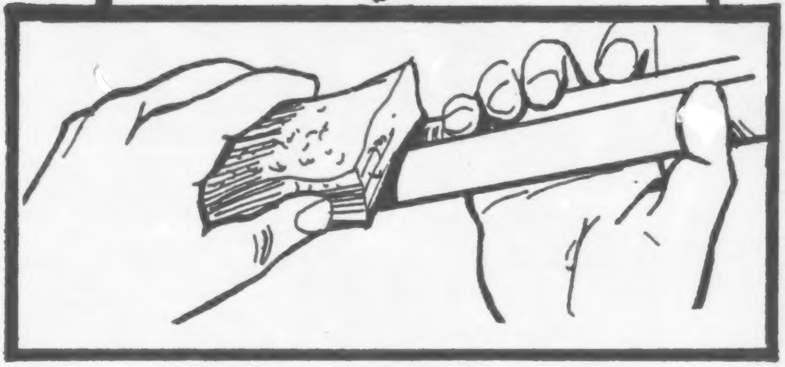
ANY WATER OR DUST IN THE TRAY OR ACTIVATOR WILL CAUSE A SEVERE LOSS OF QUALITY, SO KEEP THE PROCESSOR CLEAN.

JOB STEPS

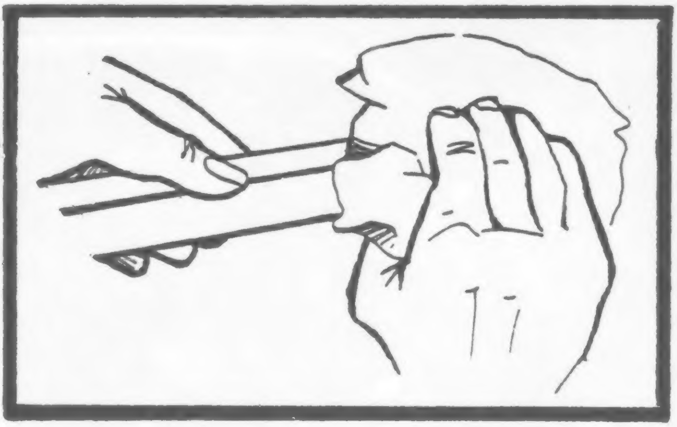
1. YOU HAVE ALREADY MADE A PMT PRINT AND USED THE PROCESSOR IN MOD 1401 10 010. TO CLEAN THE PROCESSOR ROLLERS, TURN OFF THE PROCESSOR, THEN LIFT OFF THE COVER. WITH BOTH HANDS, LIFT THE REAR ROLLER FORWARD AND UP TO REMOVE THE PAIR.



2. TAKE THE ROLLERS OUT TO A SINK IN THE WHITE LIGHT AREA. WITH A SEMI-MOIST SPONGE, WIPE BOTH ROLLERS CAREFULLY TO COMPLETELY REMOVE ALL DRIED ACTIVATOR CRYSTALS.

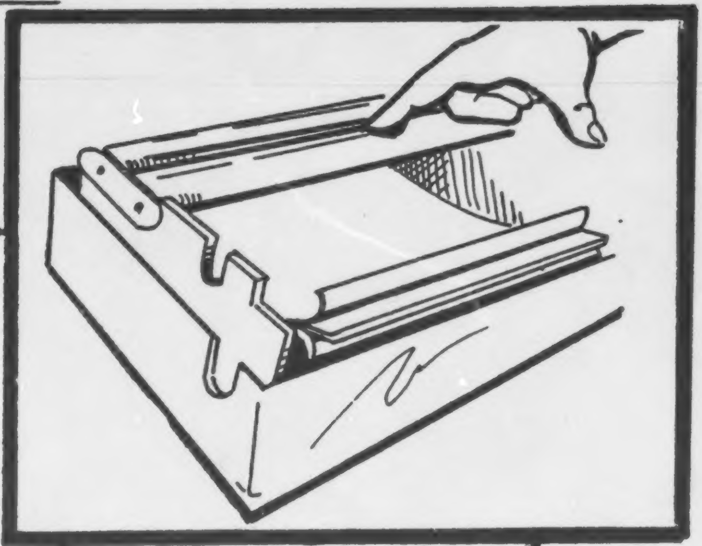


3. WHEN CLEAN, DRY THE ROLLERS COMPLETELY WITH A PAPER TOWEL. ANY WATER LEFT ON THE ROLLERS MAY CAUSE REDDISH STREAKS ON THE PMT MATERIALS LATER.

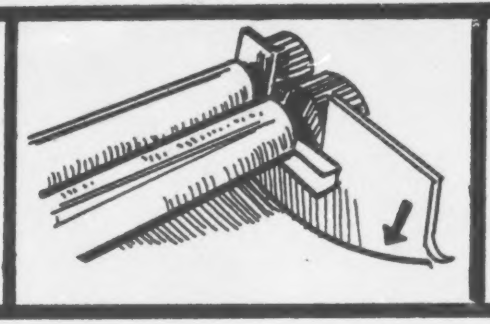


JOB STEPS

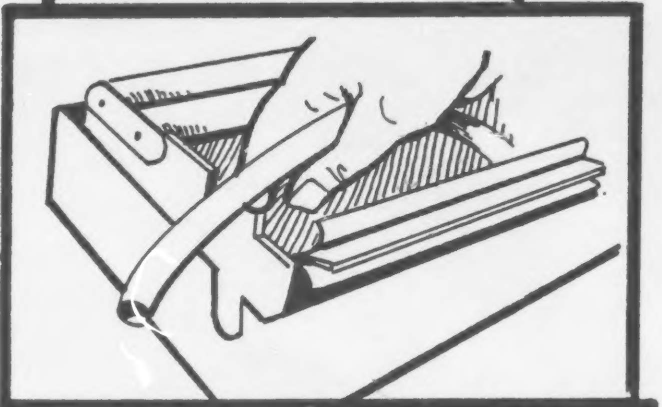
4. RETURN THE ROLLER ASSEMBLY IN THE PROCESSOR. BE SURE THE GEARS MESH SECURLY. TURN THE POWER ON TO BE SURE THE GEARS MESH. REPLACE THE COVER. YOU CHECK THE ROLLERS BY FEELING THEM WITH YOUR FINGERS, ESPECIALLY THE ENDS.



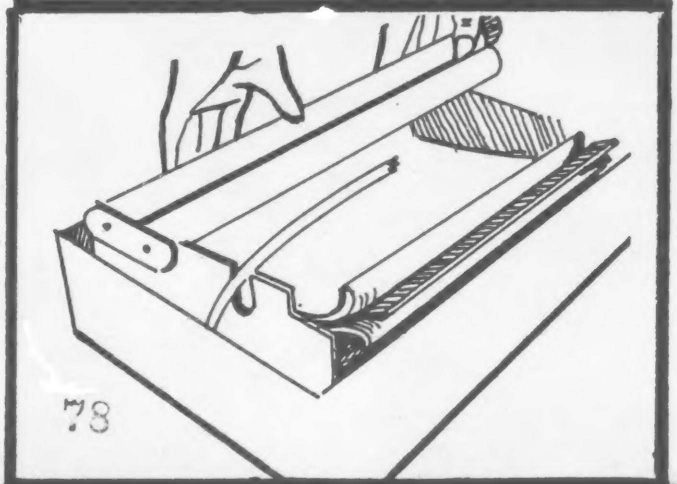
5. TO CHECK ACTIVATOR LEVEL, THERE IS A SMALL RED ARROW INSIDE THE TRAY ON THE RIGHT. THE ACTIVATOR SOLUTION LEVEL SHOULD BE TOUCHING THE POINT OF THE ARROW. IF IT IS CLEAN, ALWAYS KEEP THE ACTIVATOR AT THIS LEVEL. POUR THE ACTIVATOR DIRECTLY OUT OF THE BOTTLE INTO THE PROCESSOR TRAY.



6. TO CLEAN THE PROCESSOR, FIRST DRAIN OUT THE ACTIVATOR. OLD ACTIVATOR IS BROWNISH AND SHOULD BE DUMPED DOWN THE DRAIN. GOOD ACTIVATOR IS ALMOST CLEAR AND SHOULD BE SAVED. USE THE RUBBER DRAIN HOSE TO DRAIN THE TRAY.

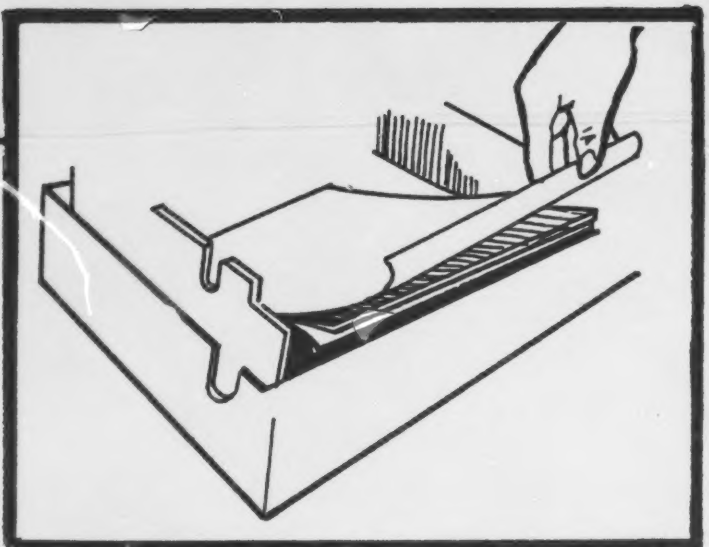


7. REMOVE THE ROLLER ASSEMBLY.

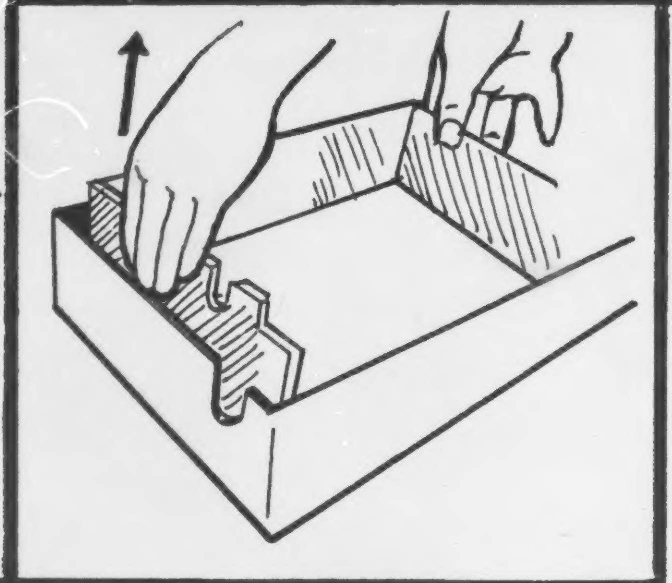


JOB STEPS

8. REMOVE THE 2 SEPARATOR PLATES.



9. REMOVE THE ENTIRE TRAY BY LIFTING STRAIGHT UP (THERE ARE SPRING HOLDING CLIPS HOLDING THE TRAY IN).



10. TAKE THE TRAY, PLATES, AND ROLLER ASSEMBLY OUT TO A SINK AND CLEAN. USE ONLY WATER ON THE ROLLERS. USE 'TRAY CLEANER' AND 'HD CLEANER' ON THE TRAY AND PLATES. WHEN CLEAN, COMPLETELY DRY THE ROLLERS, TRAY AND PLATES. BE SURE THERE IS NO WATER LEFT ANYWHERE ON THEM. REPLACE THE TRAY AND PLATES.

11. HAVE YOUR INSTRUCTOR DOUBLE-CHECK THE ASSEMBLY TO BE SURE YOU HAVE EVERYTHING CORRECT.

graphics

unit: CAMERA (PHOTOMECHANICAL REPRODUCTION)

capital area career center

1401 10 012

module: 1401 10 012 3 **date:** JULY 1977 **level:** III

skill title: EXPOSURE AND QUALITY CONTROL WITH PMT MATERIALS

developed & written by: GLEN PETTIT

visuals by: MAX LITTLE

WORD GUIDE

12-STEP GRAY SCALE - A SPECIAL EXPENSIVE TONE-RANGE GUIDE FOR EXPOSURE CONTROL AND FOCUS ON A PROCESS CAMERA.

PERFORMANCE OBJECTIVE

YOU ARE GOING TO LEARN:

HOW TO USE EXPOSURE ON PMT MATERIALS TO CORRECT FOR POOR QUALITY COPY.

AND IN ORDER TO DO THIS YOU WILL NEED:

PMT NEGATIVE PAPER

PMT RECEIVER PAPER

PROCESSOR AND ACTIVATOR

PROCESS CAMERA

12-STEP GRAY SCALE

LINE COPY

WE WILL KNOW YOU CAN DO IT WHEN:

YOU CAN DECIDE WHEN COPY NEEDS OVER-OR UNDER-EXPOSURE WITH PMT MATERIALS TO IMPROVE QUALITY.

A TAPE OF THIS MODULE IS AVAILABLE.

INFORMATION

EXPOSURE CONTROL IS VERY IMPORTANT. NOT ALL COPY HAS GOOD BLACKS AND WHITES AND IT MAY BE NECESSARY TO OVER-OR UNDER-EXPOSE YOUR ORIGINAL COPY TO IMPROVE CONTRAST. SINCE WE CANNOT CONTROL DEVELOPMENT TIME, OUR CONTROL MUST BE IN THE EXPOSURE.

SOMETIMES THE ORIGINAL COPY IS IN COLORED INK, ON COLORED PAPER, OR DIRTY OR FADED PAPER, OR DRAWN IN A SHADE OF BLACK (LIKE PENCIL). BY CHANGING THE EXPOSURE YOU CAN USUALLY IMPROVE THE CONTRAST FOR A BETTER QUALITY PMT PRINT.

IN OUR AREA, THE TRADE PRICE FOR A PMT PRINT THE SIZE OF THIS SHEET WOULD BE ABOUT $2. FOR POOR QUALITY COPY THE PRICE WOULD DOUBLE.

WE CAN ALSO MAKE PMT POSITIVES. WE USE A TRANSPARENT RECEIVER SHEET INSTEAD OF THE WHITE PAPER RECIEVER. TO MAKE A REVERSE, THE PMT NEGATIVE MATERIAL IS CONTACT PRINTED THROUGH A FILM NEGATIVE AND THEN PROCESSED. IN THE NEXT MOD YOU'LL LEARN HOW TO MAKE SIMPLE PMT HALFTONE SCREENED PRINTS FROM GOOD PHOTOGRAPHS.

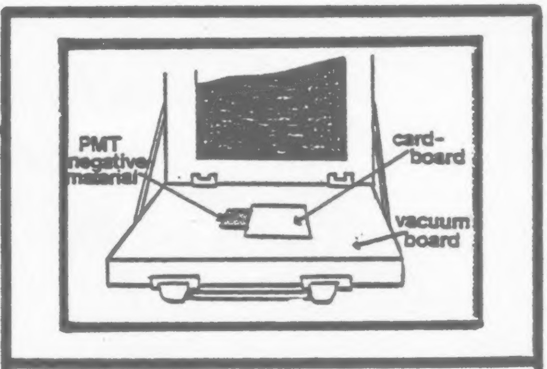
TO KEEP PMT PRINTS CLEAN FOR MANY YEARS, AND TO GET RID OF ANY YELLOW BACKGROUND, WASH THE PRINTS IN RUNNING WATER FOR A FEW SECONDS, SQUEEGEE, THEN LET AIR DRY.

IT IS BEST TO LEAVE THE NEGATIVE AND RECEIVER PAPER TOGETHER FOR ABOUT 45 SECONDS AFTER IT COMES OUT OF THE PROCESSOR. LONGER CONTACT GIVES A DARKER IMAGE. LESS CONTACT TIME GIVES A LIGHTER IMAGE.

JOB STEPS

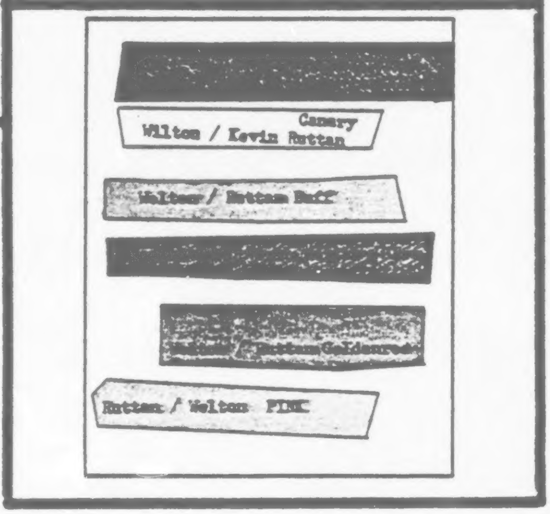
1. YOU HAVE ALREADY MADE A PMT PRINT IN MOD 1401 10 010 AND LEARNED TO MAINTAIN A PROCESSOR IN MOD 1401 10 011.

2. USE THE SAME LINE COPY THAT YOU USED FOR MOD 1401 10 010 "HOW TO USE PMT". YOU WILL MAKE TWO EXPOSURES ON ONE PIECE OF PMT MATERIAL, 10 X 25 CM, USING CARDBOARD TO COVER 1/2 THE NEGATIVE. MAKE ONE EXPOSURE AT 4 SECONDS MORE THAN NORMAL AND ONE EXPOSURE AT 4 SECONDS LESS THAN NORMAL. PROCESS THE PMT NEGATIVE AND RECEIVER MATERIALS.



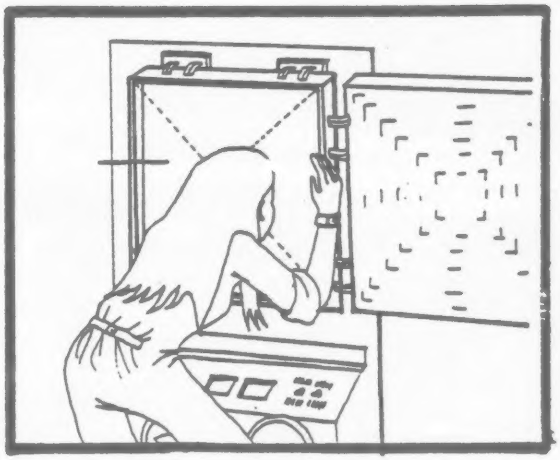
3. COMPARE THE OVER AND UNDER EXPOSED SHOTS WITH THE NORMAL EXPOSURE. WHEN YOU OVER-EXPOSE THE COPY, MORE LIGHT IS REFLECTED FROM THE WHITE PAPER AND THE BLACK IMAGE IS REDUCED. WHEN YOU UNDER-EXPOSE THE COPY, LESS LIGHT IS REFLECTED FROM THE WHITE PAPER AND THE BLACK IMAGE IS INCREASED OR BECOMES BOLDER. CAN YOU SEE THE DIFFERENCES?

4. DO OVER-AND UNDER-EXPOSURES AGAIN BUT WITH DIFFERENT COLORED PAPERS. GET AT LEAST SIX DIFFERENT COLORS OF BOND PAPER (LIGHT COLORED WRITING PAPERS, ASK YOUR INSTRUCTOR). TYPE OR PRINT YOUR NAME AND PAPER COLOR ON EACH ONE, THEN CUT AND PASTE THEM SO YOU HAVE A SMALL STRIP OF EACH COLOR THAT WILL EASILY FIT ALL TOGETHER IN A 8 X 10 CM AREA, AS SHOWN.



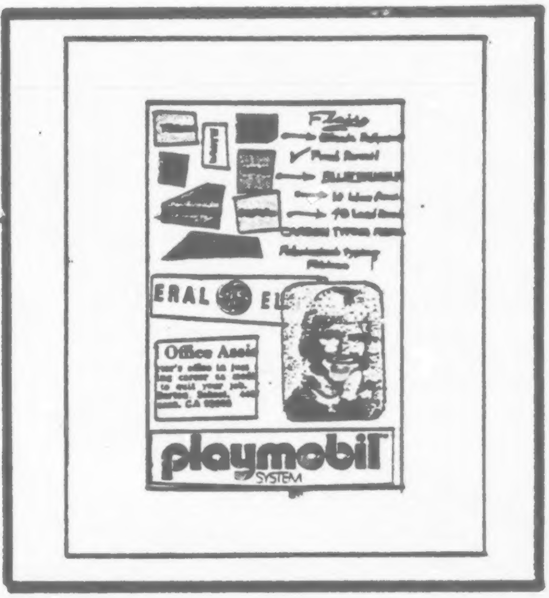
JOB STEPS

5. PLACE YOUR COLORED PAPER PASTE-UP TEST ON THE COPYBOARD WITH A 12-STEP GRAY SCALE. CHECK THE GROUND GLASS TO BE SURE EVERYTHING WILL FIT ON EACH HALF OF THE 10 X 25 CM PMT MATERIAL. OVER, AND UNDER-EXPOSURE EACH 1/2 BY 4 SECONDS FROM NORMAL, THEN PROCESS THIS.



6. COMPARE YOUR EXPOSURES. NOTICE HOW SOME COLORS BECOME DARKER OR LIGHTER WITH THE EXPOSURES. SOME OF YOUR WORDS ARE EASIER TO READ ON DIFFERENT COLORS WITH DIFFERENT EXPOSURES. COMPARE YOUR EXPOSURES WITH THE GRAY SCALE. SEE HOW THE STEPS COMPARE WITH EACH OTHER ON OVER AND UNDER-EXPOSURE. USE A BLACK BOLD PERMANENT MARKER AND WRITE YOUR EXPOSURE TIMES ON THESE TESTS FOR FUTURE REFERENCE.

7. DO THIS EXPERIMENT AGAIN, BUT WITH MANY DIFFERENT KINDS OF COPY. CENTER A 12 X 20 CM BOX ON A SHEET OF PAPER, THEN PUT IN AS MANY DIFFERENT KINDS OF COPY THAT YOU CAN FIND, INCLUDING:



- BLACK, RED AND BLUE PENCILS
- BLACK, RED AND BLUE BALL POINTS
- NEWSPAPER CLIPPING
- A PRINTED HALFTONE, MAGAZINE
- COLORED INKS
- 12-STEP GRAY SCALE

WHEN YOU ARE READY FOR EXPOSURE, HAVE YOUR INSTRUCTOR DOUBLE CHECK YOUR PASTE-UP.

JOB STEPS

8. USE A 1/2 SHEET OF PMT MATERIALS, 15 X 25 CM (6 X 10") AND MAKE 3 SEPARATE EXPOSURES:

1. NORMAL PMT EXPOSURE
2. 4 SECOND OVER-EXPOSURE
3. 4 SECOND UNDER-EXPOSURE

PROCESS EACH. RETURN THE 12-STEP GRAY SCALE.

9. COMPARE THE THREE EXPOSURES WITH YOUR ORIGINAL. STUDY YOUR RESULTS CAREFULLY, MARK DOWN THE EXPOSURE TIMES AND SAVE THESE FOR FUTURE REFERENCE. YOUR INSTRUCTOR MAY GIVE YOU SOME SIMILAR EXPOSURE PROBLEMS TO SOLVE.

10. AFTER YOU HAVE COMPLETED THE SELF-QUIZ, SHOW ALL THREE SETS OF EXPOSURES, WITH THE ORIGINAL COPY, TO YOUR INSTRUCTOR.

ANSWERS TO SELF-QUIZ ON PAGE 7

1. B
2. A
3. A
4. C
5. A
6. D
7. D
8. C
9. D
10. B
11. B
12. C

SELF-QUIZ

USE A SEPARATE SHEET OF PAPER TO WRITE YOUR ANSWERS ON. CHECK YOUR ANSWERS WHEN FINISHED. ANSWERS ARE UPSIDE DOWN ON THE BOTTOM OF THE PAGE BEFORE THIS. DO NOT WRITE ON THIS MODULE.

1. ON A PROCESS CAMERA, WHAT DO WE PHOTOGRAPH?
   A. THE IMAGE
   B. THE PAPER
   C. BLACK INK
   D. THE NEGATIVE

2. WITH PMT, FOR NORMAL COPY, MORE EXPOSURE WILL CAUSE:
   A. THE BLACK TO WEAKEN
   B. THE BLACK TO DARKEN
   C. THE PAPER TO WEAKEN
   C. THE PAPER TO DARKEN

3. ACTIVATOR WILL CAUSE THE _______ AREA TO SOFTEN.
   A. IMAGE
   B. NON-IMAGE

4. AFTER PROCESSING, WHAT WOULD HAPPEN IF THE CONTACT TIME WAS CUT DOWN TO 15 SECONDS?
   A. IMAGE WOULD DARKEN
   B. SHEETS MAY DRY TOGETHER
   C. IMAGE MAY BE GRAY
   D. NO IMAGE TRANSFER

5. WHEN UNDER-EXPOSED TO PMT, WHAT HAPPENS TO PINK PAPER?
   A. GETS LIGHTER
   B. GETS DARKER

6. FOR A DRAWING TO PRINT, WHICH WOULD BE THE BEST TO USE?
   A. BLUE PENCIL
   B. PENCIL
   C. RED PENCIL
   D. BLACK BALL POINT

7. WHICH COPY REPRODUCES BEST AT NORMAL EXPOSURE?
   A. NEWSPAPER COPY
   B. PENCIL DRAWING
   C. BLUE BALL POINT DRAWING
   D. MAGAZINE COPY

8. WHAT HAPPENS TO LIGHT BLUE PAPER OR BLUE PENCIL WITH A NORMAL PMT EXPOSURE?
   A. TURNS BLACK
   B. GETS DARKER
   C. DISAPPEARS
   D. REPRODUCES

9. WITH NORMAL EXPOSURE, RED BALL POINT REPRODUCES ALMOST THE SAME AS:
   A. RED PENCIL
   B. BLUE PENCIL
   C. NEWSPAPER COPY
   D. BLACK BALL POINT

10. THE PROCESSOR ROLLERS SHOULD BE WASHED EVERY ________.
    A. HOUR
    B. DAY
    C. WEEK
    D. MONTH

11. OLD WORN OUT ACTIVATOR WILL CAUSE THE IMAGE AREA TO:

A. TURN CLEAR
B. TURN BROWN
C. TURN REDDISH
D. TURN BLACKER

12. WATER IN THE PROCESSOR WILL CAUSE __________ STREAKS ON THE PAPER:

A. WHITE
B. BROWN
C. REDDISH
D. BLACK

graphics

unit: CAMERA (PHOTOMECHANICAL REPRODUCTION)

capital area career center

1401 10 013

module: 1401 10 013 3 **date:** AUGUST 1977 **level:** II

skill title: HOW TO MAKE A PMT SCREENED PRINT

developed & written by: GLEN PETTIT

visuals by: LAURA EIBACH

WORD GUIDE

SCREENED PRINT - A PHOTOGRAPH THAT IS MADE INTO A PRINT WHICH HAS THOUSANDS OF SMALL DOTS.

HALFTONE SCREEN - A PIECE OF PLASTIC SCREEN THAT IS PLACED ON THE NEGATIVE DURING EXPOSURE TO BREAK UP THE IMAGE INTO DOTS TO PRODUCE A HALFTONE.

PMT - PHOTOMECHANICAL TRANSFER

PERFORMANCE OBJECTIVE

YOU ARE GOING TO LEARN:

HOW TO MAKE A BASIC PMT SCREENED PRINT FROM A PHOTOGRAPH.

IN ORDER TO DO THIS YOU WILL NEED:

PMT NEGATIVE PAPER
PMT RECEIVER PAPER
PROCESSOR WITH ACTIVATOR
PROCESS CAMERA
12-STEP GRAY SCALE
A PHOTOGRAPH
PMT HALFTONE SCREEN

WE WILL KNOW YOU CAN DO IT WHEN:

1. YOU CAN MAKE A SIMPLE, PMT SCREENED PRINT FROM A GOOD PHOTOGRAPH.

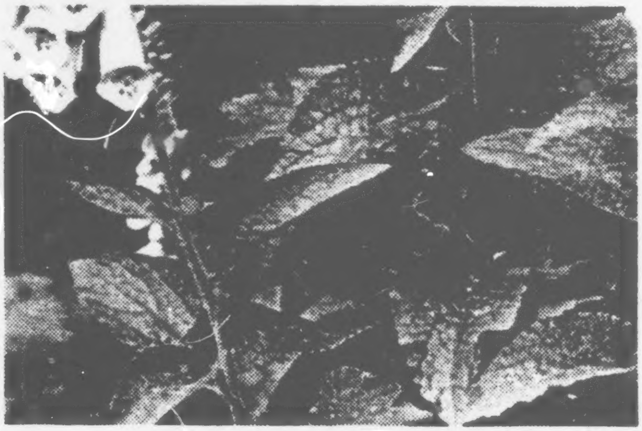
2. YOU CAN RECOGNIZE "HIGHLIGHT" AND "SHADOW", HALFTONE DOTS.

A TAPE OF THIS MODULE IS AVAILABLE.

INFORMATION

IN THIS MOD YOU WILL LEARN TO MAKE A SIMPLE PMT HALFTONE SCREEN PRINT FROM A GOOD PHOTOGRAPH (ONE THAT HAS BLOCKS, WHITES AND ALL SHADES OF GRAY).

PHOTOGRAPHS CANNOT BE PRINTED ON A PRESS BECAUSE THEY ARE CONTINUOUS TONE, WHICH MEANS THEY HAVE BLACK, WHITE, AND ALL THE DIFFERENT GRAYS IN-BETWEEN. A PRINTING PRESS CAN ONLY PRINT BLACK OR SOLID COLORS. TO GET SOMETHING LIKE GRAY, THE PHOTOGRAPH IS SCREENED INTO TINY DOTS.



NOTE: SEE PAGE 130 OF "PHOTO OFFSET FUNDAMENTALS" BY J. COGOLI (IN LIBRARY).

SMALL BLACK DOTS WILL LOOK LIKE LIGHT GREY AREAS AND LARGER BLACK DOTS WILL LOOK LIKE DARK GRAY AREAS. ALL OF THE DOTS ARE ACTUALLY SOLID BLACK, JUST DIFFERENT SIZES. WE CALL THE SMALL DOTS (LIGHT GRAY) "HIGHLIGHTS" AND THE LARGE DOTS (DARK GRAY) THE "SHADOW AREA".

IF YOU HOLD A PRINTED PICTURE AT ARMS LENGTH, YOU CAN NOT SEE THE HIGHLIGHT OR SHADOW DOTS. FROM A DISTANCE, THE HIGHLIGHT DOTS LOOK LIKE LIGHT GRAY AND THE SHADOW DOTS LOOK LIKE DARK GRAY. ALL PHOTOGRAPHS MUST BE SCREENED INTO A HALFTONE SO THEY CAN BE PRINTED.

TO MAKE A PMT SCREENED PRINT (OR HALFTONE), WE USE TWO EXPOSURES THROUGH A VERY EXPENSIVE SPECIAL PLASTIC SCREEN. THE REGULAR WHITE LIGHT EXPOSURE WITH THE CAMERA IS CALLED THE "MAIN", AND THE SHORT YELLOW LIGHT EXPOSURE IN THE CEILING IS CALLED THE "FLASH" EXPOSURE.

A PMT SCREENED PRINT ON THE PASTE-UP WILL SAVE TIME AND MONEY. MOST SMALL NEWSPAPERS WILL ONLY USE PMT SCREENED PRINTS BECAUSE THE ENTIRE PASTE-UP CAN BE SHOT JUST LIKE LINE COPY TO MAKE THE NEGATIVES (SCREENED PHOTOGRAPHS AND WORDS TOGETHER).

IN OUR AREA, PMT SCREENED HALFTONE PRINTS COST ABOUT $5 EACH. THE PURPOSE OF THIS MOD IS TO HELP YOU UNDERSTAND HOW A HALFTONE

INFORMATION

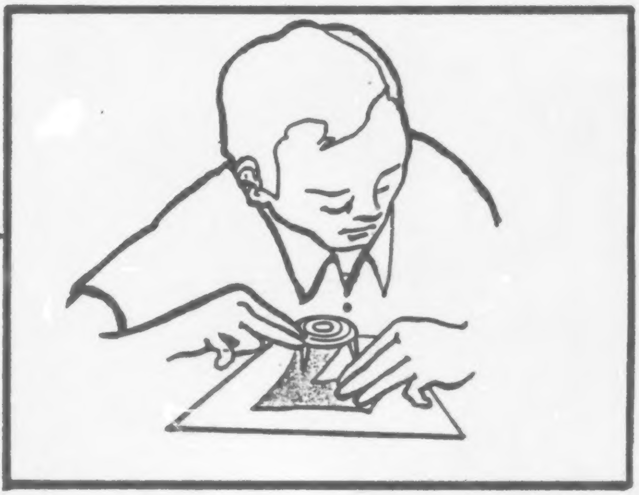
SCREENED PRINT IS MADE AND WHAT HALFTONE DOTS LOOK LIKE. IT IS EASY TO MAKE A SCREENED PRINT FROM A GOOD PHOTOGRAPH WHEN YOU ARE GIVEN THE CORRECT EXPOSURE TIMES. MOST PHOTOGRAPHS ARE NOT GOOD AND REQUIRE EXPOSURE CORRECTION. LEARNING TO MAKE GOOD HALFTONES WILL TAKE ABOUT 15 HOURS (MODS 1401 10 020, 1401 10 020 3, 1401 10 021, 1401 10 021 3, AND 1401 10 022, 1401 10 022 3.

JOB STEPS

1. COMPLETE MOD 1401 10 012 1 - 3 "EXPOSURE AND QUALITY CONTROL WITH PMT MATERIALS" BEFORE STARTING THIS MODULE.

2. TAKE ALL EQUIPMENT AND MATERIALS TO YOUR WORK AREA.

3. FIND A MAGAZINE WITH SOME PRINTED PICTURES IN IT. WITH A MAGNIFYING GLASS, LOOK AT THE PICTURE CLOSELY AND FIND SOME "HIGHLIGHT" DOTS (SMALL BLACK DOTS), AND THEN SOME "SHADOW" DOTS (LARGE BLACK DOTS).

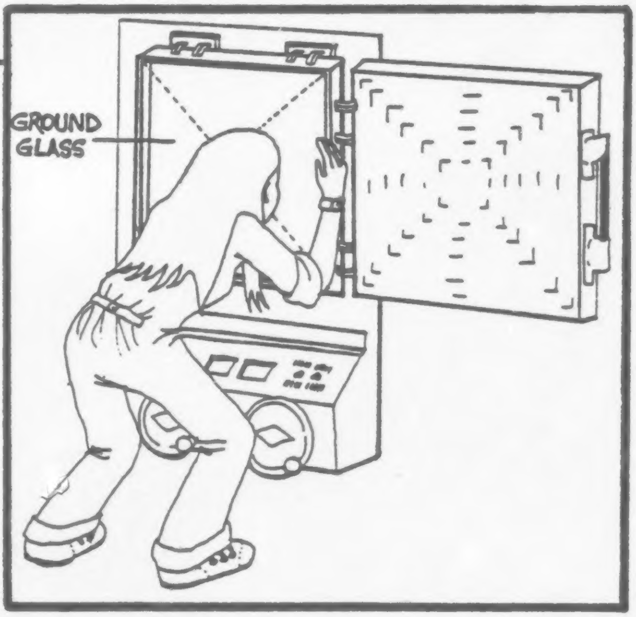


4. HAVE YOUR INSTRUCTOR HELP YOU SELECT A GOOD PHOTOGRAPH.

NOTE: YOU MAY USE A GOOD BLACK AND WHITE PHOTOGRAPH OF YOUR OWN.

5. BECAUSE THE PMT HALFTONE SCREEN IS SO EXPENSIVE AND MUST BE HANDLED SO CAREFULLY, HAVE YOUR INSTRUCTOR (OR AN ADVANCE STUDENT) WORK WITH YOU. CENTER THE BLACK AND WHITE PHOTOGRAPH ON THE COPYBOARD. PLACE YOUR NAME AND TODAY'S DATE ON ONE SIDE AND A 12-STEP GRAY SCALE ON THE OTHER SIDE.

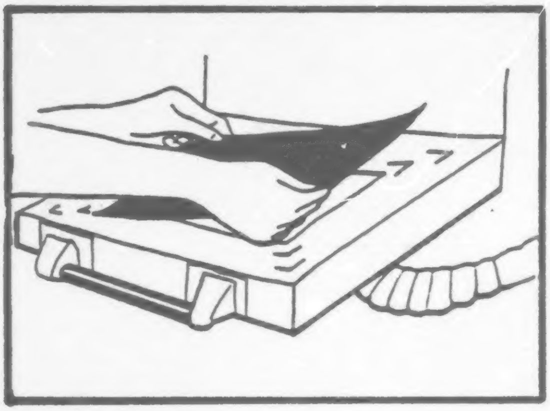
6. CHECK POSITION THROUGH THE GROUND GLASS ON THE CAMERA. ENLARGE OR REDUCE SO ALL THREE ITEMS WILL EASILY FIT ON A 10 X 15 CM (4" X 10") PIECE OF PMT NEGATIVE MATERIAL.



JOB STEPS

7. SET UP YOUR CAMERA FOR THE CORRECT SIZE. SET THE TIMER FOR _____ SECONDS AND GET OUR YOUR PMT HALFTONE SCREEN SO YOU CAN CHECK FOR DUST AND SMEARS.

8. PLACE THE PMT NEGATIVE MATERIAL ON THE VACUUM BOARD AND TURN ON THE VACUUM. CAREFULLY PLACE THE PMT HALFTONE SCREEN OVER THE NEGATIVE MATERIAL, CLOSE THE CAMERA AND MAKE THE MAIN EXPOSURE. DO NOT TURN OFF THE VACUUM AFTER EXPOSURE.



JOB STEPS

9. WITH THE VACUUM ON, OPEN THE VACUUM BOARD AND MAKE THE FLASH EXPOSURE FOR ______ SECONDS.

10. AFTER THE YELLOW FLASH LIGHT GOES OFF' TURN OFF THE VACUUM, REPLACE THE PMT HALFTONE SCREEN AND PROCESS YOUR PMT SCREENED PRINT.

11. CHECK YOUR PRINT FOR QUALITY. HOLD IT AT ARMS-LENGTH. DOES IT LOOK LIKE A PHOTOGRAPH? USE A MAGNIFYING GLASS ON THE HIGHLIGHT AREAS OF THE PICTURE. IS THERE A SMALL BLACK DOT (STEP #1 ON THE GRAY SCALE)? IS THERE A LARGE BLACK DOT, OR SMALL WHITE OPENING IN THE SHADOW AREA (STEP #10 ON THE GRAY SCALE)?

12. SHOW THE INSTRUCTOR YOUR PMT SCREENED PRINT AND THE ORIGINAL PHOTOGRAPH. YOU WILL BE ASKED TO IDENTIFY HIGHLIGHT AND SHADOW DOT AREAS. IF YOUR SCREENED PRINT IS NOT CORRECT, YOU MAY BE ASKED TO MAKE ANOTHER AT A DIFFERENT EXPOSURE. YOUR INSTRUCTOR WILL EXPLAIN WHY.

13. BE SURE TO RETURN THE PMT HALFTONE SCREEN, THE GRAY SCALE AND YOUR ORIGINAL PHOTOGRAPH.

graphics

unit: CAMERA (PHOTOMECHANICAL REPRODUCTION)

capital area career center

module: 1401 10 014
1401 10 014 3 date: 8/77 level: I

skill title: CONTACT PRINTING

developed & written by: GLEN PETTIT

visuals by: MIKE SMITH

PERFORMANCE OBJECTIVE

YOU ARE GOING TO LEARN:

HOW TO DO CONTACT PRINTING, USE A VACUUM FRAME, AND USE A POINT LIGHT SOURCE.

IN ORDER TO DO THIS YOU WILL NEED:

- CONTACT PROOF PAPER
- VACUUM FRAME
- POINT LIGHT SOURCE
- DARKROOM AND CHEMICALS
- A NEGATIVE

WE WILL KNOW YOU CAN DO IT WHEN:

YOU CAN CORRECTLY USE A VACUUM FRAME AND POINT LIGHT SOURCE TO PRODUCE A CONTACT PRINT OF A NEGATIVE. THE CONTACT PRINT IS CLEAN WITH A SHARP, SOLID BLACK IMAGE AREA AND A FLAT WHITE BACKGROUND.

A TAPE OF THIS MODULE IS AVAILABLE.

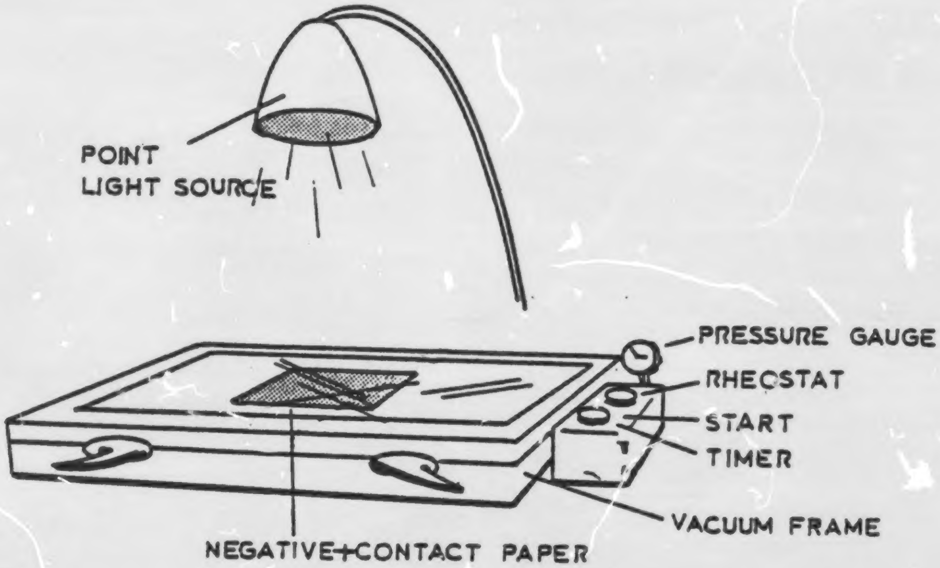
INFORMATION

CONTACT PRINTS ARE MADE IN THE DARKROOM ON SPECIAL CONTACT PAPER BY EXPOSING A BRIGHT LIGHT THROUGH A NEGATIVE TO THE CONTACT PAPER, WHICH IS HELD TIGHTLY UNDER THE NEGATIVE BY VACUUM.

VACUUM FRAME: WILL HOLD THE NEGATIVE EMULSION AND CONTACT PAPER EMULSION TIGHTLY TOGETHER (25# PRESSURE) DURING THE ENTIRE EXPOSURE. USE GLASS CLEANER TO KEEP BOTH SIDES OF THE GLASS CLEAN, AND CHECK THE GLASS EVERY TIME YOU USE IT. DUST WILL BLOCK OUT LIGHT.

POINT LIGHT SOURCE: THE LIGHT COMES FROM A SMALL PIN POINT IN THE LAMP, WHICH WILL PRODUCE A PERFECT, SAME-SIZE CONTACT (BUT WILL CAUSE DUST TO SHOW, TOO). THE POINT LIGHT SHOULD BE AT LEAST A METER AWAY AND CAN BE CONTROLLED BY A RHEOSTAT. A RHEOSTAT CAN VARY THE BRIGHTNESS OF THE LIGHT (EACH # IS TWICE THE BRIGHTNESS OF THE LOWER #). THE TIMER CONTROL GIVES ACCURATE EXPOSURES AND SHUTS OFF THE LIGHT.

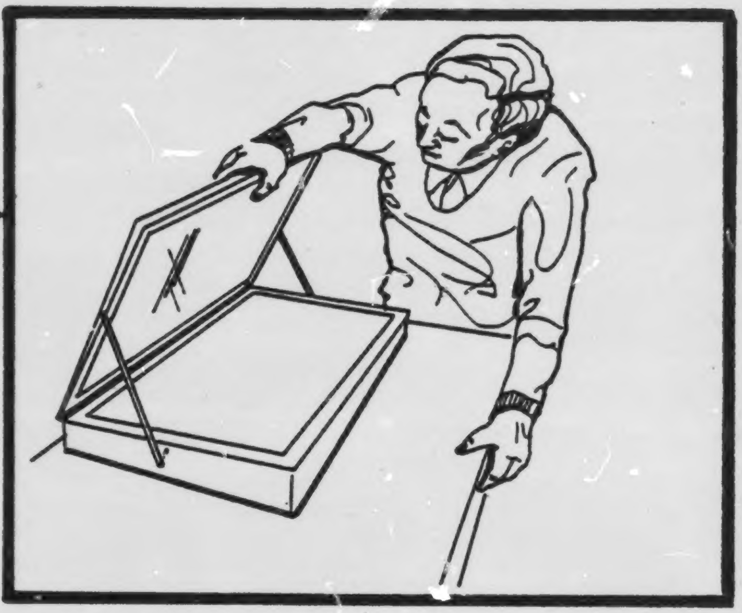
IN ADDITION TO CONTACT PRINTS, YOU CAN REVERSE (FLOP) AN IMAGE, SCREEN AN IMAGE, COMBINE SEVERAL NEGATIVES ON ONE CONTACT, CREATE SPECIAL EFFECTS, CAUSE FLATTER (SPREAD), OR THIN (CHOKE) THE IMAGE. FILM CAN BE USED IN CONTACTING TO MAKE POSITIVES FROM NEGATIVES.



JOB STEPS

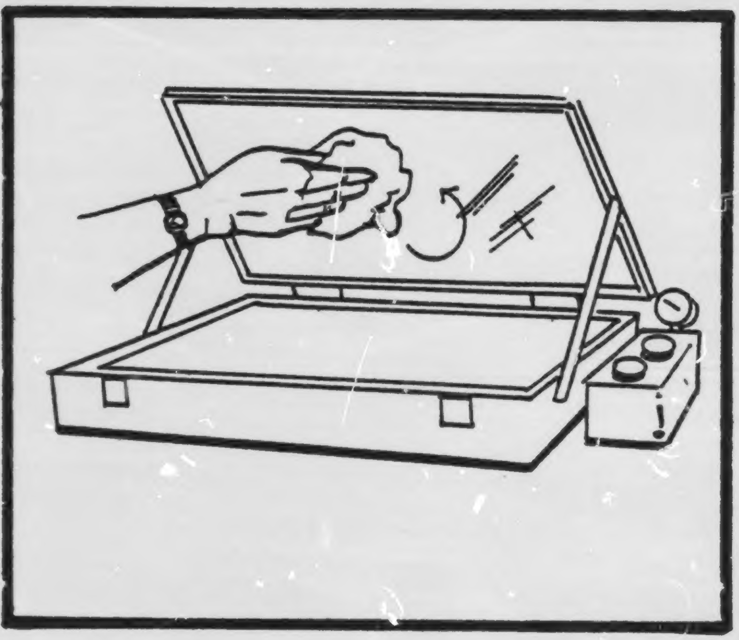
1. TAKE ALL EQUIPMENT AND MATERIALS TO YOUR WORK AREA.

2. CENTER THE VACUUM FRAME ON THE COUNTER UNDER THE POINT LIGHT SOURCE. CHECK TO SEE IF THE GLASS IS CLEAN ON BOTH SIDES BY UNLOCKING THE TWO LATCHES TO LIFT THE GLASS.



3. USING GLASS CLEANER AND A SOFT PAPER TOWEL OR CLOTH, CLEAN THE GLASS.

NOTE: SMALL CIRCLES DO THE BEST JOB AND THE GLASS SHOULD SQUEEK WHEN CLEAN. DO NOT OVERSPRAY AND BE SURE THE GLASS IS DRY BEFORE CONTACTING.



4. CHECK THE POINT LIGHT SOURCE.

   A. TURN ON THE SWITCH.

   B. SET THE TIMER FOR 20 SECONDS AND PUSH THE START BUTTON (BE SURE IT IS OK WITH ANYONE ELSE IN THERE TO TURN ON A WHITE LIGHT AS THIS LIGHT WILL EXPOSE FILM ANYWHERE IN THE DARKROOM.

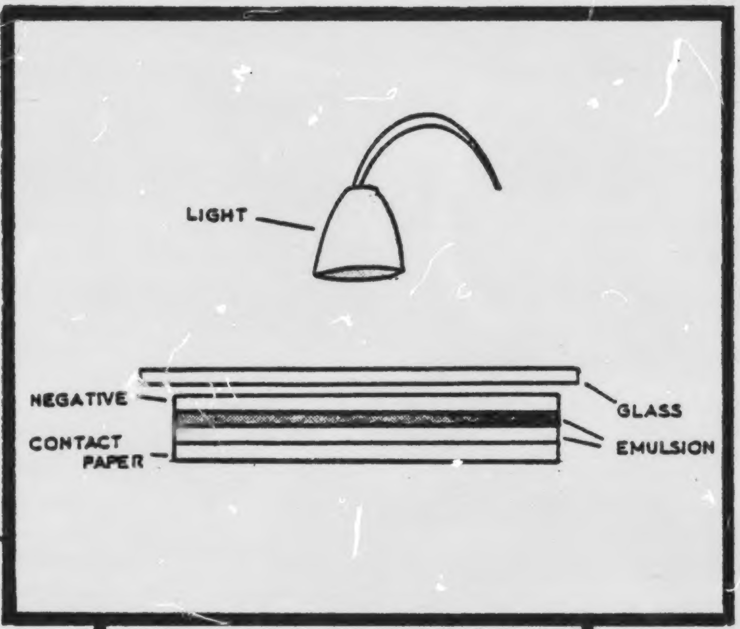
   C. THE LIGHT SHOULD GO ON; ADJUST THE RHEOSTAT TO CONTROL BRIGHTNESS.

JOB STEPS

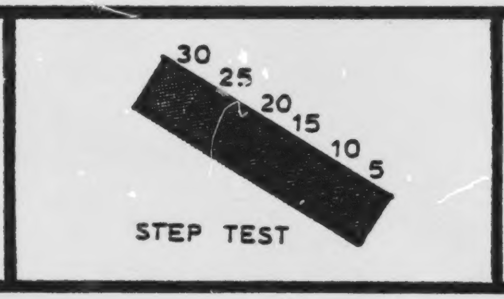
5. NOW YOU ARE READY TO MAKE YOUR TEST EXPOSURES TO FIND THE CORRECT EXPOSURE TIME AND INTENSITY. TRY TO GET A 10 TO 20 SECOND EXPOSURE TIME (LESS THAN 10 SECONDS IS HARD TO TIME; OVER 20 INVITES SAFELIGHT EXPOSURE).

6. CUT A LONG STRIP OF CONTACT PRINT PAPER ABOUT 5 OR 6 CM WIDE (BE CONSERVATIVE). THERE SHOULD BE A CONTACT PRINTING TEST NEGATIVE ON THE WALL. IF NOT, USE ANY NEGATIVE THAT HAS A LOT OF FINE LINE COPY (WORDS).

7. PLACE THE CONTACT PRINT PAPER, EMULSION UP (SMOOTH, SHINE SIDE), NEGATIVE EMULSION DOWN - ON THE PAPER (DULL SIDE). CLOSE THE GLASS AND TURN ON THE VACUUM.

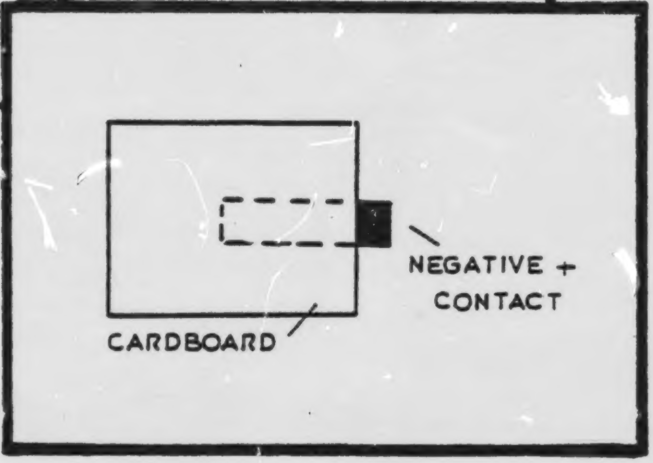


8. SET THE TIMER FOR 30 SECONDS AND SET THE RHEOSTAT ABOUT HALF-WAY. USE A PIECE OF CARDBOARD AND MAKE A STEP-TEST.



A. EVERY 5 SECONDS DURING THE EXPOSURE, UNCOVER ABOUT 1/6 OF THE NEGATIVE.

B. COVER MOST OF THE NEGATIVE, START THE TIMER, AND QUICKLY MOVE THE CARDBOARD EACH 5 SECONDS.



C. MOVE AND STOP, MOVE AND STOP (BE CAREFUL). THE TIMER WILL SHUT OFF THE LIGHT.

9. REMOVE THE STEP TEST FROM TEH VACUUM FRAME AND PROCESS:

A. DEVELOPER (A & B ORTHO DEVELOPER) 1 1/2 MINUTES.

B. STOP (STOP BATH) 1/4 MINUTE.

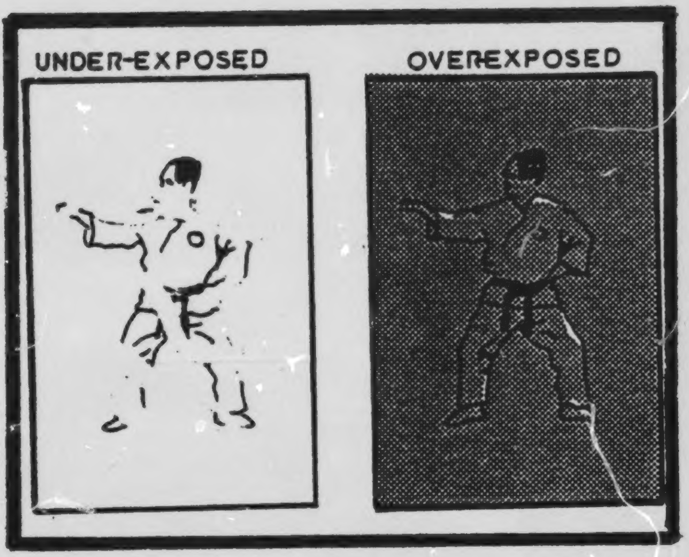
C. FIX (FIXER) 2-4 MINUTES.

JOB STEPS

D. WASH (RUNNING WATER) 10 MINUTES.

E. DRY

10. EXAMINE YOUR STEP TEST. A GOOD CONTACT PRINT WILL LOOK JUST LIKE THE FINAL PRINTED PIECE SHOULD LOOK. IF THE LETTERS ARE BOLD, THICK, AND FURRY, YOU HAVE OVEREXPOSED. IF THIN AND GRAY, YOU HAVE UNDEREXPOSED.



11. MAKE ADDITIONAL TEST STRIPS TO FIND THE EXACT EXPOSURE TIME AND INTENSITY. BE SURE THE DEVELOPMENT IS EXACTLY THE SAME EACH TIME.

12. WHEN YOU HAVE FOUND THE BEST EXPOSURE, TAKE ANY SMALL NEGATIVE YOU HAVE MADE AND MAKE A CONTACT PRINT.

13. SHOW YOUR CONTACT PRINT AND TEST EXPOSURES TO YOUR INSTRUCTOR FOR CREDIT.

14. NOW TAKE THE SELF-QUIZ.

SELF QUIZ - WRITE YOUR ANSWERS ON A SEPARATE PIECE OF PAPER, THEN CHECK YOUR OWN WORK. ANSWERS ARE ON PAGE 7 OF THIS MODULE.

1. THE ______ CAN DIM THE LIGHT INTENSITY ON A POIBT LIGHT SOURCE.

2. THE PRESSURE IN A VACUUM FRAME SHOULD BE ______ POUNDS.

3. IN CONTACT PRINTING, THE LIGHT GOES THROUGH THE ______ FIRST, THEN EXPOSES THE ______ PAPER.

4. THICK BLURRY LETTERS ON A CONTACT PRINT MEANS THAT IT IS ______.

5. MORE THAN 2 1/2 MINUTES IN THE DEVELOPER WILL CAUSE ______.

6. OLD DEVELOPER WILL CAUSE THE IMAGE TO BE ______.

7. REVERSING AN IMAGE IN CONTACT PRINTING IS ALSO CALLED A ______.

8. WHAT WOULD A NEGATIVE OF A NEGATIVE BE CALLED?

ANSWERS TO SELF QUIZ

1. RHEOSTAT
2. 25#
3. NEGATIVE - CONTACT
4. OVEREXPOSED
5. OVERDEVELOPMENT
6. GREY OR UNDERDEVELOPED
7. FLOP
8. A POSITIVE

graphics

unit: CAMERA (PHOTOMECHANICAL REPRODUCTION)

capital area career center

module: 1401 10 015
1401 10 015 3 **date:** 8/77 **level:** I

skill title: HOW TO USE DUPLICATING FILM

developed & written by: GLEN PETTIT

visuals by: MIKE SMITH

PERFORMANCE OBJECTIVE

YOU ARE GOING TO LEARN:

HOW TO USE DUPLICATING FILM TO MAKE DUPLICATE NEGATIVES.

IN ORDER TO DO THIS YOU WILL NEED:

DARKROOM & CHEMICALS

VACUUM FRAME

POINT LIGHT SOURCE (QUARTZ)

KODALITH DUPLICATING FILM

WE WILL KNOW YOU CAN DO THIS WHEN:

1. YOU CAN USE DUPLICATING FILM TO MAKE A PERFECT DUPLICATE NEGATIVE.
2. THE DUPLICATE NEGATIVE IS THE EXACT SAME SIZE, DENSITY AND QUALITY AS THE ORIGINAL NEGATIVE.

A TAPE OF THIS MODULE IS AVAILABLE.

INFORMATION

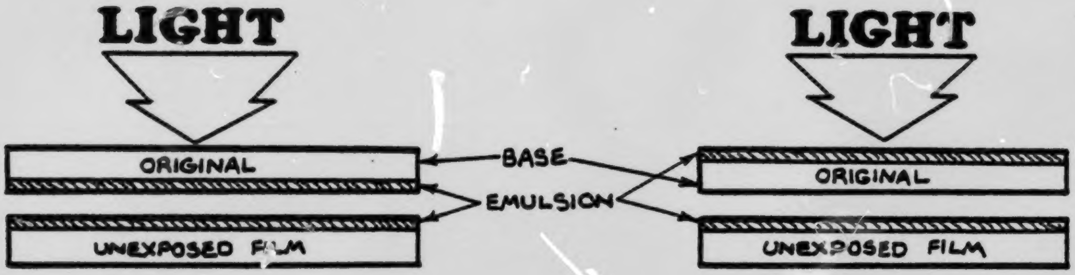
OFTEN, IT IS NECESSARY TO MAKE A DUPLICATE NEGATIVE (NEGATIVES IDENTICAL TO THE ORIGINAL). IF YOU WERE TO PUT THE COPY BACK ON THE CAMERA, IT COULD BE OFF-SIZE BY 1% AND IT WOULD BE HARD TO DEVELOP TWO NEGATIVES TO EXACTLY THE SAME DENSITY. SOMETIMES, THE ORIGINAL COPY IS RETURNED OR DAMAGED. IF A NEGATIVE OR FLAT HAS A LOT OF CORRECTIONS, CUTTING, TAPE AND OPAQUE ON IT, IT IS BEST TO MAKE A NEW, CLEAN DUPLICATE NEGATIVE. MOST LARGE PRESSES WILL PRINT 2, 4 OR 8 COPIES OF A JOB AT ONCE, IF IT IS A LONG RUN. THERE ARE MANY REASONS FOR MAKING A DUPLICATE NEGATIVE RATHER THAN JUST SHOOTING MORE ON THE CAMERA.

KODALITH DUPLICATING FILM IS A HIGH CONTRAST FILM FOR DUPLICATING NEGATIVES. IT IS A 'CONTACT-SPEED' FILM (NOT AS SENSITIVE TO LIGHT AS IS ORTHO FILM) AND CAN BE MADE IN A CONTACT FRAME (OR PLATEBURNER IF UNDER YELLOW SAFELIGHTS).

EXCEPT FOR A LONGER EXPOSURE TIME, DUPLICATING FILM IS PROCESSED JUST LIKE ORTHO FILM:

DEVELOP: 2½ MINUTES 20° C.
STOP: 1/4 MINUTES
FIX: 2-4 MINUTES
WASH: 10 MINUTES

MOST FILMS ARE CONTACT PRINTED WITH THE EMULSION-TO-EMULSION, BUT NOT DUPLICATING FILM. REMEMBER, EMULSION-TO-BASE FOR DUPLICATING FILM.



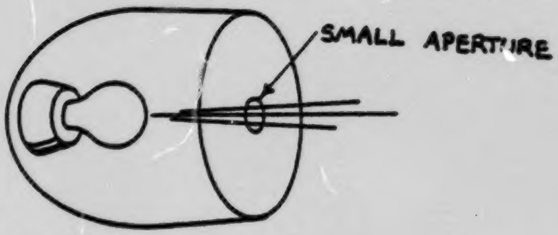
DUPLICATING CAN BE EXPOSED THROUGH THE EMULSION (DUPLICATE) OR THROUGH THE BASE TO PRODUCE A LATERAL REVERSE ("FLOP").

DUPLICATE NEGATIVES SHOULD BE MADE IN A SAFELIGHT DARKROOM. IN A VACUUM FRAME AND THEN EXPOSED TO A POINT LIGHT SOURCE.

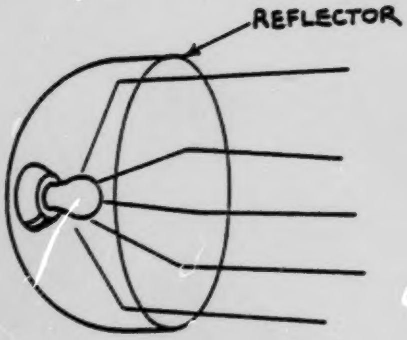
(SEE ILLUSTRATION ON TOP OF NEXT PAGE)

ILLUMINATION - LIGHT

INFORMATION



POINT LIGHT SOURCE
(Contact Printing)



REFLECTOR-TYPE LIGHT SOURCE
(Platemaking)

DUPLICATE NEGATIVES MADE ON A PLATEBURNER ARE SLIGHTLY ENLARGED IN THE IMAGE AREAS (THEY WILL BE BOLDER THAN THE ORIGINAL NEGATIVES). THIS FILM IS HIGH CONTRAST FILM; THERE ARE NO GRAYS, AND IMAGE AREAS ARE CLEAR, WITH BACKGROUNDS SOLID. COST IS ABOUT $1 PER 10" X 12" SHEET, PLUS CHEMICALS (1978).

DUPLICATING FILM CAN BE EXPOSED IN A REGULAR PLATEMAKER UNDER LOW-LIGHT ILLUMINATION, IF YOU WORK QUICKLY. EXPOSURE IN THE PLATEMAKER IS ABOUT 1 SECOND. HIGH-SPEED DUPLICATING FILM CAN BE EXPOSED DIRECTLY IN A PROCESS CAMERA.

HIGH SPEED DUPLICATING FILM IS "TWICE AS FAST", WHICH MEANS IT NEEDS ONLY 1/2 AS MUCH LIGHT AS REGULAR DUPLICATING FILM TO PROPERLY EXPOSE.

JOB STEPS

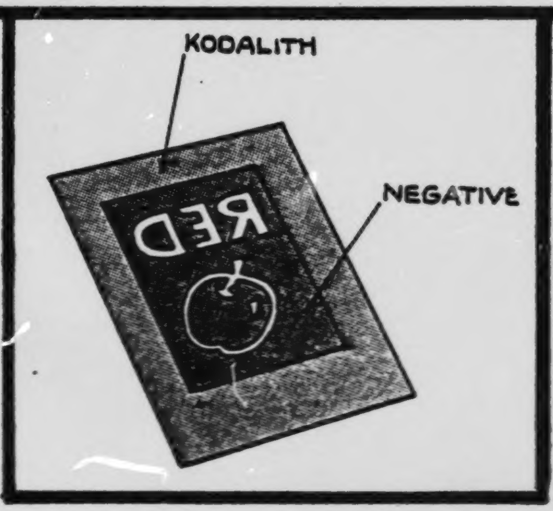
1. FIRST, COMPLETE MOD 1401 10 014 "CONTACT PRINTING", SO THAT YOU KNOW HOW TO USE A CONTACT PRINTER AND HOW TO DETERMINE CONTACT EXPOSURE TIMES.

2. TAKE ALL EQUIPMENT & MATERIALS TO YOUR WORK AREA.

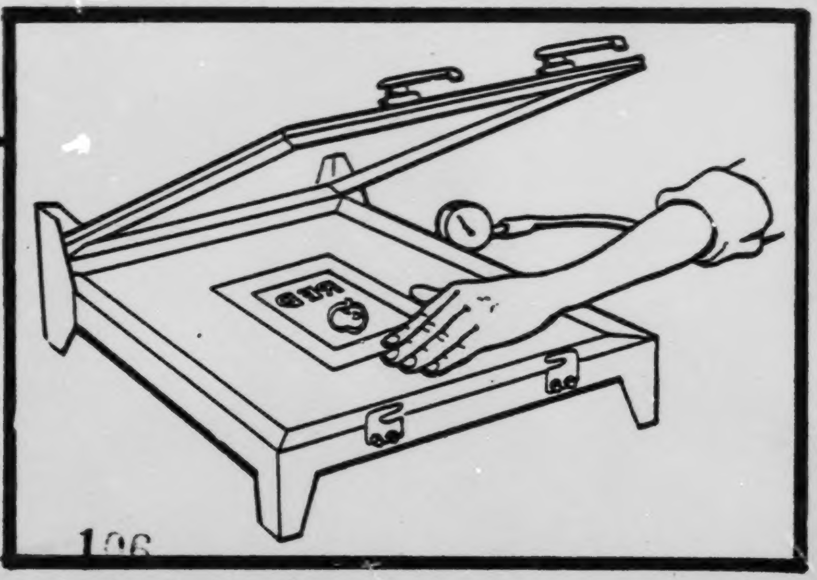
3. SET UP THE CONTACT PRINTER, CLEAN THE VACUUM GLASS, AND CHECK THE POINT-LIGHT SOURCE RHEOSTAT AND TIMER.

4. SELECT A SMALL GOOD-QUALITY NEGATIVE WITH A 12-STEP GRAY SCALE (FROM ONE OF YOUR BASIC CAMERA MODS).

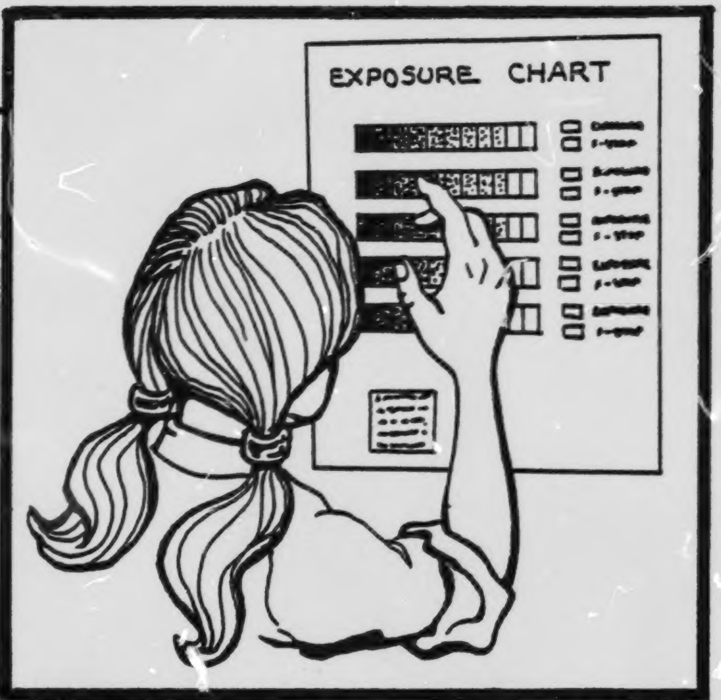
5. GET A PIECE OF KODALITH DUPLICATING FILM THAT IS 10 X 12.5 CM (4" X 5") OR SMALLER. PLACE THE DUPLICATING FILM EMULSION UP (LIGHTER SIDE) UNDER THE NEGATIVE WHICH IS ALSO EMULSION UP (DULL WRONG READING SIDE UP).



6. PLACE BOTH IN THE CONTACT PRINTER (UNDER LOW 1A RED SAFE-LIGHT ILLUMINATION) SO THE LIGHT WILL PASS THROUGH THE NEGATIVE TO THE DUPLICATING FILM.



7. CHECK THE EXPOSURE CHART TO FIND THE BASIC EXPOSURE TIME AND INTENSITY OR ASK YOUR INSTRUCTOR. IF THE EXPOSURE TIME IS UNKNOWN, MAKE A STEP TEST LIKE YOU DID IN THE LAST MOD, "CONTACT PRINTING".



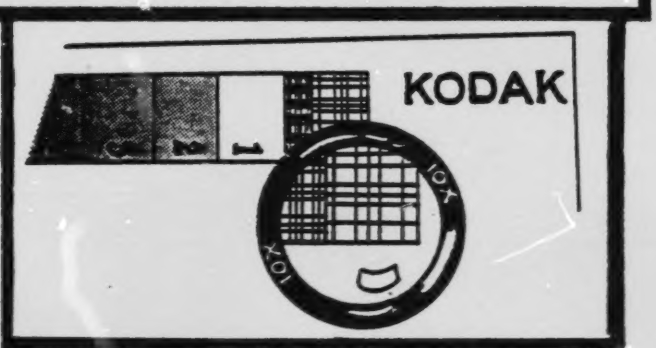
8. EXPOSE THE DUPLICATING FILM.

9. DEVELOP THE SAME AS FOR ORTHO FILM:

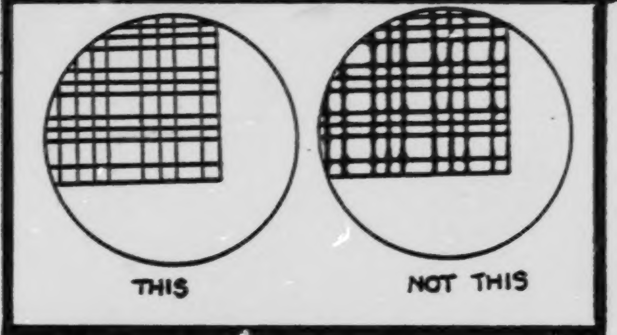
DEVELOP	2½ MINUTES
STOP	1/4 MINUTE
FIX	2-4 MINUTES
WASH/DRY	10 MINUTES

10. TAKE YOUR DRY DUPLICATE NEGATIVE AND THE ORIGINAL NEGATIVE TO A LIGHT TABLE AND COMPARE QUALITY WITH A 10X MAGNIFYING GLASS. LOOK AT THE LINE PATTERN IN THE 12-STEP GRAY SCALE (SENSITIVITY GUIDE):

IS THE FINE LINE PATTERN IN FOCUS?

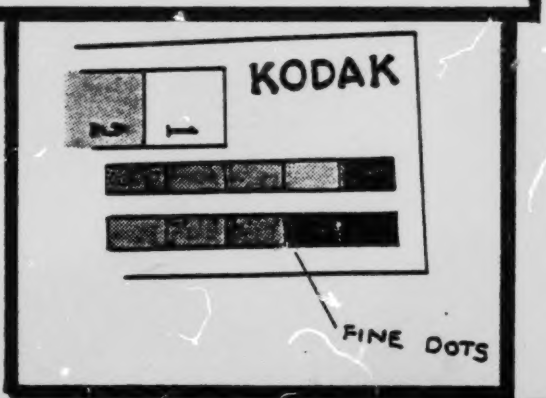


ARE THE CORNERS SQUARE ON BOTH?



DO THE FINE DOTS COMPARE EQUALLY?

ARE THE TWO NEGATIVES IDENTICAL?



11. WHEN SATISFIED WITH YOUR RESULTS, REPLACE THE CONTACT PRINTER AND SHOW YOUR ORIGINAL AND DUPLICATE NEGATIVES TO YOUR INSTRUCTOR.

graphics

unit: CAMERA (PHOTOGRAPHICAL REPRODUCTION)

capital area career center

1401 10 016

module: 1401 10 016 3 **date:** 8/77 **level:** II

skill title: SPREADS, CHOKES, & OUTLINE TYPE BY CONTACT PRINTING

developed & written by: GLEN PETTIT

visuals by: MIKE SMITH

WORD GUIDE

SPREAD & CHOKE - TO MAKE A BETTER, FATTER OR THINNER OUTLINE - A THIN HOLLOW LETTER.

PERFORMANCE OBJECTIVE

YOU ARE GOING TO LEARN:

HOW TO MAKE A SPREAD AND A CHOKE, AND HOW TO DO OUTLINE TYPE WITH FILMS ON A CONTACT PRINTER.

IN ORDER TO DO THIS YOU WILL NEED:

PROCESS CAMERA
DARKROOM & CHEMICALS
CONTACT PRINTER (POINT LIGHT & VACUUM FRAME)
CONTACT & DUPLICATING FILM

WE WILL KNOW YOU CAN DO IT WHEN:

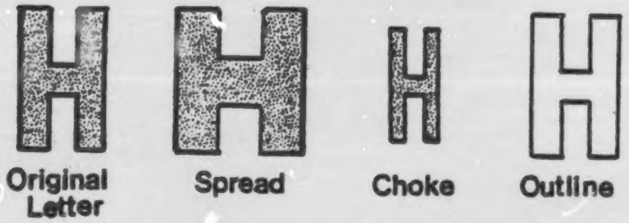
1. YOU CAN MAKE A SPREAD OR A CHOKE FROM .001" (OR LARGER) USING CONTACT OR DUPLICATING FILM.
2. YOU CAN MAKE AN OUTLINE LETTER FROM .001" (OR LARGER) AND THE FINAL PRINT IS DUST & DOT FREE.
3. YOU CAN CONTROL AND USE SPREADS & CHOKES TO PHOTOGRAPHICALLY PRODUCE CREATIVE EFFECTS WITH CONTACT PRINTING.

A TAPE OF THIS MODULE IS AVAILABLE.

INFORMATION

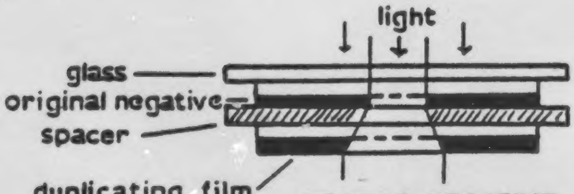
IT IS OFTEN NECESSARY TO ENLARGE, OR WIDEN THE LINES IN A DESIGN BECAUSE THE ORIGINAL IS DRAWN TOO THIN. A LIGHT, THIN TYPEFACE MAY ALSO HAVE TO BE "SPREAD". IF A THIN BLACK LINE IS PRINTED ON BRIGHT COLORED PAPER, THE COLOR MAY OVERPOWER THE LETTERING AND MAKE IT HARD TO READ.

"CHOKE" IS WHEN THE DESIGN OR WORDS ARE REDUCED IN THICKNESS, MADE SKINNY OR THIN. A BOLD TYPE FACE OR DESIGN CAN BE "CHOKED DOWN" TO MAKE IT MORE PLEASING.

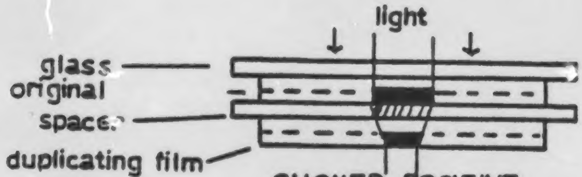


AN OUTLINE IS TWO LINES WHICH MAKE UP A HOLLOW LETTER. SPREADS, CHOKES, AND OUTLINE LETTERS CAN BE MADE ON A CONTACT PRINTER FROM A NEGATIVE OR POSITIVE (VACUUM FRAME AND POINT LIGHT SOURCE) IN THE DARKROOM. THE SIZE CHANGE CAN BE CONTROLLED FROM .001" TO .025" OR MORE BY USING SPACERS (CLEAR PIECES OF PLASTIC).

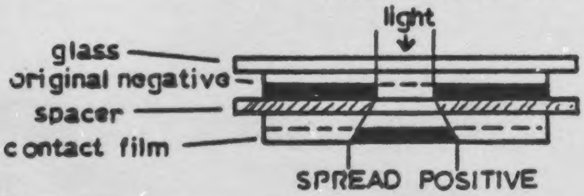
THERE ARE FOUR COMBINATIONS (SANDWICHES) USED FOR SPREADS AND CHOKES (REMEMBER TO ALWAYS HAVE THE EMULSION DOWN, AWAY FROM THE LIGHT SOURCE).



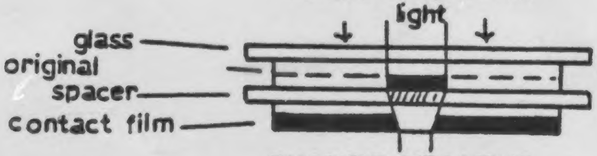
SPREAD NEGATIVE



CHOKED POSITIVE



SPREAD POSITIVE



CHOKED NEGATIVE

INFORMATION

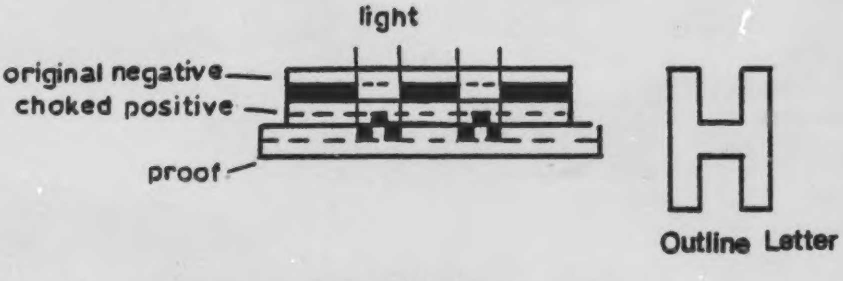
SPREADS & CHOKES

Original	Desired Result	Procedure
FILM NEGATIVE	Choked Negative	1. Make a contact positive on film. 2. Make a choke on film.
	Choked Positive	1. Make a contact positive on film. 2. Make a choke on duplicating film.
	Spread Negative	Make a spread on duplicating film.
	Spread Positive	Make a spread on film.
FILM POSITIVE	Choked Negative	Make a choke on film.
	Choked Positive	Make a choke on duplicating film.
	Spread Negative	1. Make a contact negative on film. 2. Make a spread on duplicating film.
	Spread Positive	1. Make a contact negative on film. 2. Make a spread on film.

LOOKING AT THE ABOVE CHART, YOU CAN SEE HOW THE LIGHT GOES THROUGH THE GALSS TO THE NEGATIVE, THROUGH THE IMAGE AREA (OPEN AREA), THROUGH THE SPACER WHERE IT WIDENS OR SPREADS, TO THE UNEXPOSED FILM. THE THICKER THE CLEAN PLASTIC SPACER, THE GREATER THE SPREAD.

FOR A CHOKE, THE LIGHT GOES THROUGH THE GLASS TO THE POSITIVE WHERE THE OPAQUE BLACK IMAGE AREA BLOCKS IT. THE LIGHT GOES THROUGH THE SPACER WHERE IT WIDENS TO UNDERCUT OR REDUCE THE IMAGE PRODUCING A CHOKE.

TO MAKE AN OUTLINE, FIRST MAKE A CONTACT POSITIVE, MAKE A CHOKED POSITIVE, AND THEN MAKE A CONTACT PROOF WITH THE ORIGINAL NEGATIVE AND CHOKED POSITIVE IN REGISTER:



SPACERS CAN BE ADDED BETWEEN THE ORIGINAL NEGATIVE & CHOKED NEGATIVE TO INCREASE THE OUTLINE THICKNESS.

INFORMATION

WHEN LINEWORK OR A DESIGN MUST BE SUPERIMPOSED (PUT OVER) A COLORED BACKGROUND AND IT IS A PERFECT TIGHT FIT, THERE WILL BE PROBLEMS. MOST SMALL PRESSES CANNOT HOLD TIGHT REGISTER AND THE BLACK OR COLOR PRINTER MAY MOVE OR MISPRINT SLIGHTLY. TO ELIMINATE THIS REGISTER, SPREAD THE IMAGE (TWO SPACERS) SO IT OVERLAPS THE COLOR BY SEVERAL THOUSANDTHS.

BEFORE DOING THE JOB STEPS, BE SURE YOU HAVE COMPLETED MODS 1401 10 014 "CONTACT PRINTING", AND 1401 10 015 "DUPLICATING FILM".

JOB STEPS

1. TAKE ALL EQUIPMENT & MATERIALS TO YOUR WORK AREA.

2. FIRST. PREPARE YOUR COPY: SET YOUR NAME OR HOME SCHOOL IN A CLEAN REGULAR TYPEFACE SO IT CAN BE MADE INTO A NEGATIVE. THE IMAGE AREA MUST EASILY FIT INTO A 5 X 8 CM AREA.

3. SHOOT, PROCESS, DRY, & OPAQUE THE NEGATIVE SO ONLY YOUR NAME OR SCHOOL SHOWS.

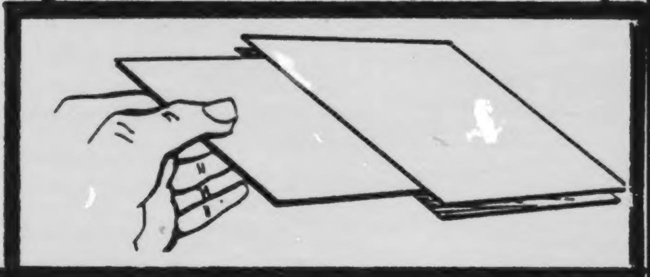
4. MAKE A SPREAD NEGATIVE: GET A CLEAR PIECE OF PLASTIC (.004") AND PLACE THIS BETWEEN YOUR ORIGINAL NEGATIVE AND A PIECE OF DUPLICATING FILM (CHECK THE EXPOSURE CHART FOR TIME).

5. EXPOSE AND PROCESS YOUR SPREAD NEGATIVE.

6. MAKE A CHOKE NEGATIVE: USE CONTACT FILM AND MAKE A CONTACT POSITIVE FROM YOUR ORIGINAL NEGATIVE (YOU CAN START STEPS 5 AND 6 WHILE WAITING FOR IT TO FIX).

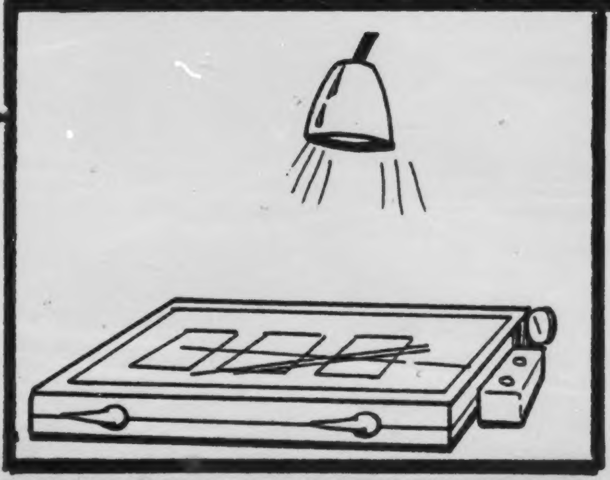
7. PROCESS AND DRY.

8. PLACE THE SPACER BETWEEN THIS POSITIVE AND ANOTHER PIECE OF CONTACT FILM. EXPOSE AND PROCESS YOUR CHOKED NEGATIVE.



9. GET THREE PIECES OF CONTACT PAPER AND MAKE A CONTACT PRINT OF YOUR ORIGINAL NEGATIVE, THE SPREAD NEGATIVE AND THE CHOKE NEGATIVE.

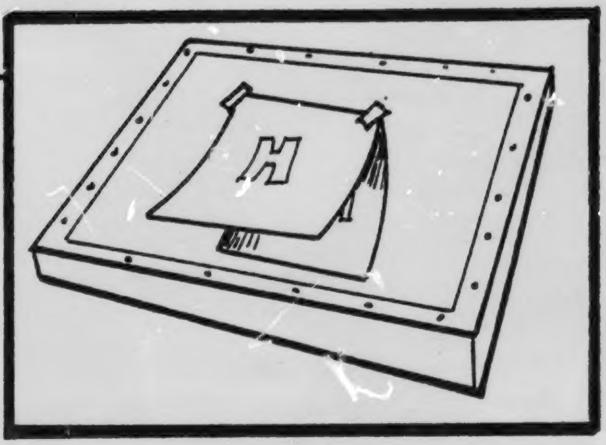
10. EXPOSE ALL THREE AT ONCE (CHECK THE EXPOSURE CHART FOR THE EXPOSURE TIME). PROCESS & DRY.



11. MAKE AN OUTLINE: TAKE YOUR CONTACT POSITIVE FROM STEP #4 AND MAKE A CHOKE POSITIVE WITH DUPLICATING FILM.

12. EXPOSE, PROCESS, AND DRY.

JOB STEPS



13. ON A LIGHT TABLE, TAPE THE ORIGINAL NEGATIVE AND THIS CHOKED POSITIVE TOGETHER IN REGISTER.

14. MAKE A CONTACT PRINT OF THIS OUTLINE 'SANDWICH'. IT WOULD HELP TO TILT THE VACUUM FRAME ABOUT 20°, 1/4 OF THE EXPOSURE WITH EACH OF THE FOUR SIDES TILTED UP.

15. PROCESS AND DRY THIS OUTLINE CONTACT PRINT.

16. SHOW ALL FOUR OF YOUR CONTACT PRINTS TO YOUR INSTRUCTOR FOR EVALUATION AND CREDIT. AT THIS TIME YOU AND YOUR INSTRUCTOR WILL DISCUSS A CREATIVE APPLICATION OR JOB YOU CAN DO USING SPREADS AND CHOKES. YOU WILL DESIGN, PLAN, CONTACT AND MAKE A 2-COLOR COLOR-KEY PROOF USING SPREADS & CHOKES CREATIVELY.

17. PHOTOGRAPHICALLY PRODUCE A CREATIVE EFFECT USING SPREADS & CHOKES. MAKE A STEP-BY-STEP JOB PLAN FIRST, GET YOUR INSTRUCTOR'S OK, THEN PRODUCE IT TO EASILY FIT ON 10 X 12.5 CM FILMS.

graphics

unit: CAMERA (PHOTOMECHANICAL REPRODUCTION)

capital area career center

1401 10 017
module: 1401 10 017 3 **date:** 8/77 **level:** II

skill title: HOW TO USE AUTOPOSITIVE FILM

developed & written by: GLEN PETTIT

visuals by: MIKE SMITH

PERFORMANCE OBJECTIVE

YOU ARE GOING TO LEARN:

HOW TO USE AUTOPOSITIVE FILM TO MAKE DUPLICATE FILM NEGATIVES OR DUPLICATE FILM POSITIVES.

IN ORDER TO DO THIS YOU WILL NEED:

DARKROOM AND CHEMICALS

PLATEMAKER

KODAK AUTOPOSITIVE FILM

WE WILL KNOW YOU CAN DO IT WHEN:

1. YOU CAN MAKE A DUPLICATE NEGATIVE OR DUPLICATE POSITIVE USING AUTOPOSITIVE FILM WITH BOTH SOLID DENSE AREAS & CLEAR AREAS.
2. YOU CAN REMOVE OR ADD DENSITY TO AUTOPOSITIVE FILM USING WHITE OR YELLOW LIGHT EXPOSURES ON A PLATEMAKER.

A TAPE OF THIS MODULE IS AVAILABLE.

WORD GUIDE

FOGGED - TO EXPOSE THE ENTIRE FILM TO LIGHT

INFORMATION

KODAK AUTOPOSITIVE FILM IS A DIRECT-DUPLICATING FILM USED TO MAKE CONTACT FILM DUPLICATE-NEGATIVES OR POSITIVES FROM A NEGATIVE. UNIQUELY, AUTOPOSITIVE FILM CAN BE EXPOSED (WITH WHITE LIGHT) AND THEN UNEXPOSED (WITH YELLOW LIGHT).

WHEN AUTOPOSITIVE FILM WAS MADE IN NEW YORK, IT WAS FOGGED (EXPOSED) TO WHITE LIGHT. IF YOU TAKE A PIECE OF AUTOPOSITIVE FILM AND DEVELOP IT RIGHT FROM THE FILM BOX, IT WILL TURN SOLID BLACK. IF YOU EXPOSE AUTOPOSITIVE WITH YELLOW LIGHT THROUGH A NEGATIVE, YOU WILL GET A DUPLICATE NEGATIVE AFTER DEVELOPING.

REMEMBER: THE YELLOW LIGHT EXPOSURE REMOVES DENSITY AND THE WHITE LIGHT EXPOSURE PUTS IN DENSITY.

BECAUSE AUTOPOSITIVE IS A SLOW CONTACT-SPEED FILM, WE USE A PLATEMAKER FOR EXPOSURE. TO EXPOSE WITH YELLOW LIGHT, WE LAY A LARGE SPECIAL YELLOW FILTER SHEET OVER THE FILM DURING EXPOSURE ON THE PLATEMAKER. THIS YELLOW LIGHT EXPOSURE REQUIRES ABOUT 15 TIMES MORE EXPOSURE TIME THAN THE WHITE LIGHT EXPOSURE.

1. NO EXPOSURE + NO NEGATIVE = SOLID BLACK
2. YELLOW LIGHT EXPOSURE THROUGH THE NEGATIVE = DUPLICATE NEGATIVE
3. A. EXPOSE ENTIRE AUTOPOSITIVE TO YELLOW LIGHT, THEN
   B. EXPOSE AUTOPOSITIVE THROUGH NEGATIVE WITH WHITE LIGHT = POSITIVE.

INFORMATION

KODAGRAPH AUTOPOSITIVE Clear Film AC4

- Contact-speed, extremely high contrast film for making contact positive reproductions from positive originals.
- Clear haze-free base, well suited to making overlays used in making maps and printed circuits.
- 4-mil ESTAR Base

Safelight: Safe in ordinary room light, without any special lighting or safelights, within practical limits. In rooms with an illumination level of 10 footcandles, the film can stand exposure to tungsten light for 4 minutes—to daylight-type fluorescent light for 2 minutes—before being printed. At higher levels of illumination, proportionately shorter times are allowable. For 40 footcandles of illumination, not more than 1 minute's exposure to tungsten light or ½ minute's exposure to daylight-type fluorescent light is safe before printing. After the printing exposure, further exposure to room light should be kept as short as possible.

Revisions: Photographic-image lines can be removed with KODAGRAPH Eradicator. There are complete instructions with each KODAGRAPH Eradicator Kit.

Exposure: Use either the print-through or reflex method of contact printing. KODAGRAPH Sheeting (yellow or orange), or equivalent, must be used between the film and a carbon-arc light source or a high-intensity, mercury-vapor light source. Yellow sheeting is usually used. However, if the light-source intensity is very high (so that exposure times are shorter than the equipment can handle), orange or dark orange sheeting is used instead of yellow in order to increase exposure time. The sheeting can be used as an overlay, or it can be located permanently over the light source.

If a print is to be used as an intermediate for making other copies, make the intermediate reverse-reading by exposing the face of the original and the emulsion of the film in contact. This permits emulsion-to-emulsion printing of right-reading copies from the intermediate and yields greatest sharpness.

Contact: Using film original.

1. Pulsed-xenon arc with vacuum or pressure contact-printing frame—4000 watts at 2 feet.

Through	Exposure Time*
KODAGRAPH Sheeting (yellow)	40 seconds
KODAGRAPH Sheeting (orange)	80 seconds

*These exposures made on a flip-top platemaker equipped with a pulsed-xenon light source.

2. Carbon-arc lamp with vacuum or pressure contact-printing frame—95-ampere arc at 4 feet (1200 footcandles).

Print-Through

Through	Exposure Time
KODAGRAPH Sheeting (yellow)	45 seconds
KODAGRAPH Sheeting (orange)	90 seconds

Reflex

Through	Exposure Time**
KODAGRAPH Sheeting (yellow)	30 to 35 seconds
KODAGRAPH Sheeting (orange)	50 to 55 seconds

**Exposures are critical. Use these exposure times as a starting point.

Tray Processing Procedure

1. **Develop:** Suggested developing conditions follow if Kodak chemicals are used.

Developer (Dilution)	Development Time (minutes)	Development Range* (minutes)
KODALITH Liquid (1:3)	2	1½ to 3½
KODALITH Super RT	2¾	1¾ to 3¾
KODAGRAPH Liquid (1:7)	1	¾ to 3
KODAGRAPH Powder	1	¾ to 3

*Satisfactory results can usually be obtained over this range of developing times. Developer temperature should be 68°F (20°C). Agitate the films continuously during development and keep them under the solution to prevent uneven development, spots, and stains.

2. **Rinse** about 10 seconds at 65 to 80°F (18.5 to 26.5°C) with constant agitation in KODAK Indicator Stop Bath or KODAK Stop Bath SB-1a.

3. **Fix** at 65 to 80°F (18.5 to 26.5°C).
   KODAK Fixer —2-4 minutes
   KODAK Rapid Fixer—1-2 minutes

4. **Wash** 10 minutes in running water at 65 to 80°F (18.5 to 26.5°C). Separate sheets of film frequently for thorough washing.

5. **Dry:** Carefully remove excess water with a squeegee or a clean, soft, moist viscose sponge. Incomplete removal of surface water may result in drying marks. Hang film in a dust-free area to dry.

Kodak Machine Processing Data Releases are available from Eastman Kodak Company, Department 662C, Rochester, N.Y. 14650. Please specify film, processor model, and chemicals.

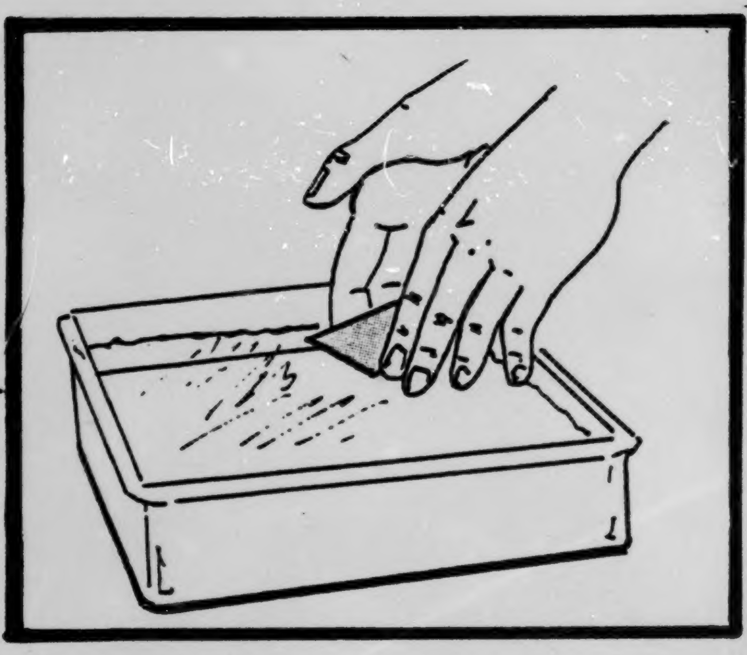
JOB STEPS

1. DID YOU COMPLETE MOD 1401 10 015, "HOW TO USE DUPLICATING FILM"?

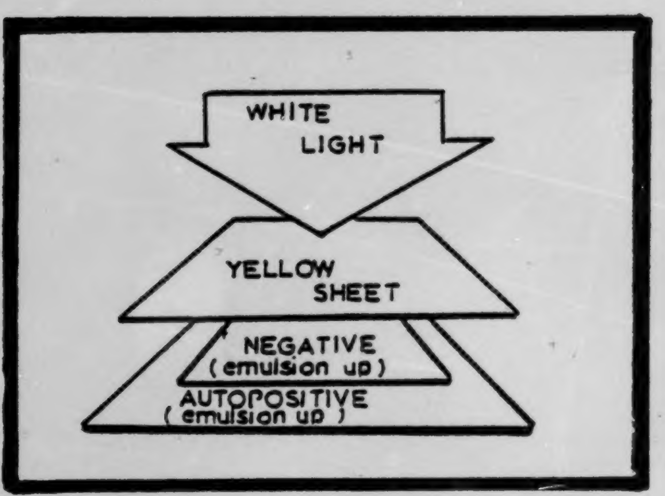
2. TAKE ALL EQUIPMENT AND MATERIALS TO YOUR WORK AREA.

3. TAKE A SMALL (5 X 10 CM) PIECE OF KODAK AUTOPOSITIVE FILM OUT OF THE BOX. DEVELOP THIS IN REGULAR ORTHO CHEMICALS FOR THE REGULAR ORTHO PROCESSING TIMES. →

NOTE: SAVE THE PROCESSED FILM. THE UNEXPOSED AUTOPOSITIVE FILM SHOULD TURN SOLID BLACK WHEN PROCESSED.



4. GET A SMALL LINE NEGATIVE FROM ONE OF YOUR BASIC CAMERA MODS, A 5 X 10 CM PIECE OF AUTOPOSITIVE FILM AND THE PLASTIC YELLOW SHEETING MATERIAL (IN THE AUTOPOSITIVE BOX). PLACE THE YELLOW SHEET ON THE NEGATIVE (EMULSION UP) AND BOTH OF THESE ON THE AUTOPOSITIVE (EMULSION UP). →

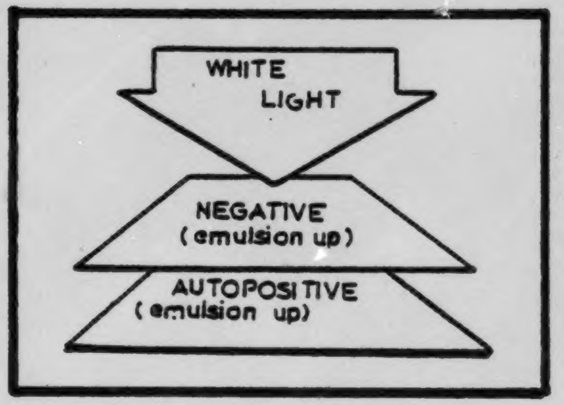


JOB STEPS

5. CLOSE THE GLASS ON THE PLATEMAKER, SET VACUUM, FLIP & EXPOSE. CHECK EXPOSURE CHART FOR THE CORRECT EXPOSURE TIME FOR AUTOPOSITIVE FILM.

6. AFTER EXPOSURE, PROCESS THE AUTOPOSITIVE FILM AS YOU DID IN STEP #2. YOU SHOULD HAVE A DUPLICATE NEGATIVE THE SAME AS YOUR ORIGINAL NEGATIVE.

7. THIS IS HOW TO MAKE A POSITIVE USING 5 X 10 CM AUTOPOSITIVE FILM. FIRST, REMOVE THE BUILT-IN WHITE FOG BY EXPOSING THE AUTOPOSITIVE FILM THROUGH THE YELLOW SHEETING. THEN WITH A WHITE LIGHT EXPOSURE (CHECK EXPOSURE CHART FOR TIME), EXPOSE THROUGH THE NEGATIVE (FROM STEP #4) TO THE AUTOPOSITIVE FILM.

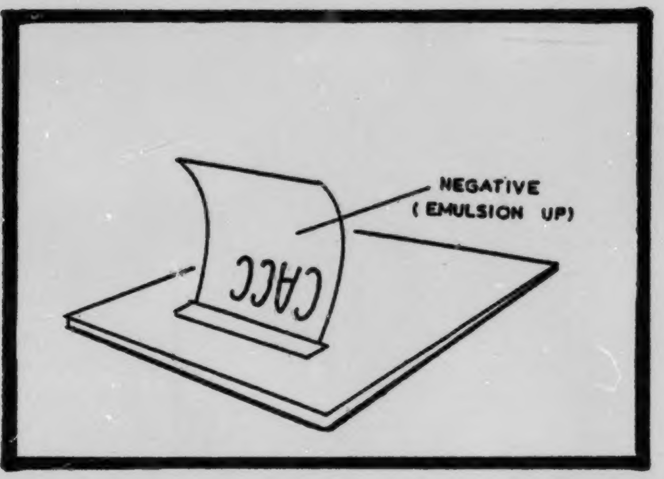


8. PROCESS AND EVALUATE YOUR AUTOPOSITIVE FILM. YOU SHOULD HAVE AN EXACT POSITIVE OF YOUR ORIGINAL NEGATIVE, WITH A DENSE BLACK IMAGE AREA AND A CLEAR, CLEAN BACKGROUND WITHOUT PINHOLES OR SCRATCHES.

JOB STEPS

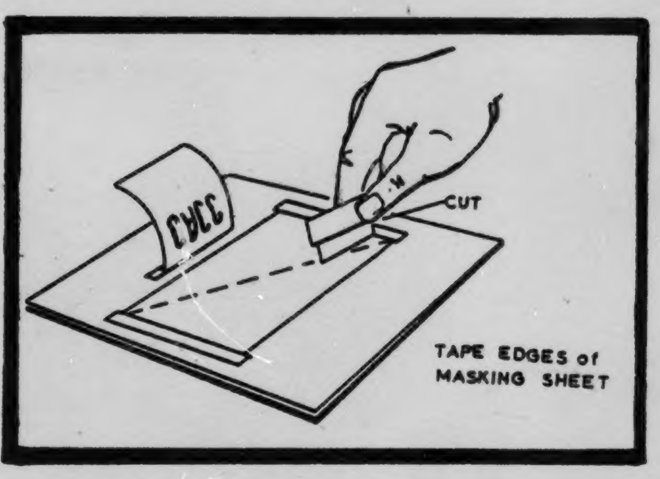
9. TO DO A COMBINATION "DIAGONAL POSITIVE-REVERSE" ON ONE PIECE OF FILM:

   A. TAPE THE TOP EDGE OF YOUR NEGATIVE (EMULSION UP) TO A PIECE OF CHIPBOARD. TAPE A SMALL PIECE OF MASKING PAPER OVER THIS NEGATIVE. →

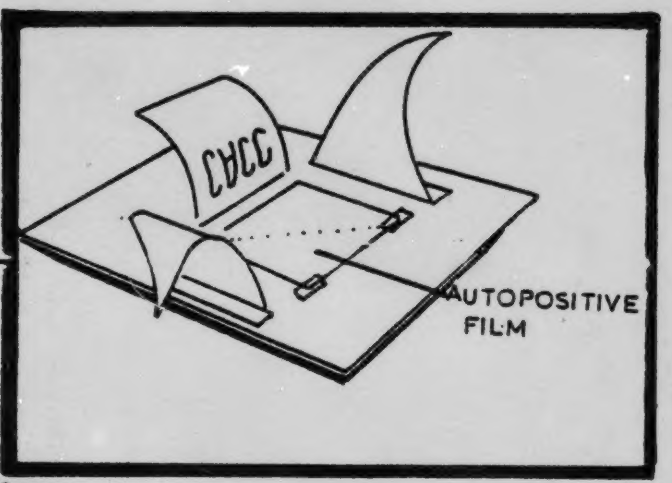


   B. PUT THE TAPE ON THE RIGHT AND LEFT EDGES OF THE MASKING SHEET.

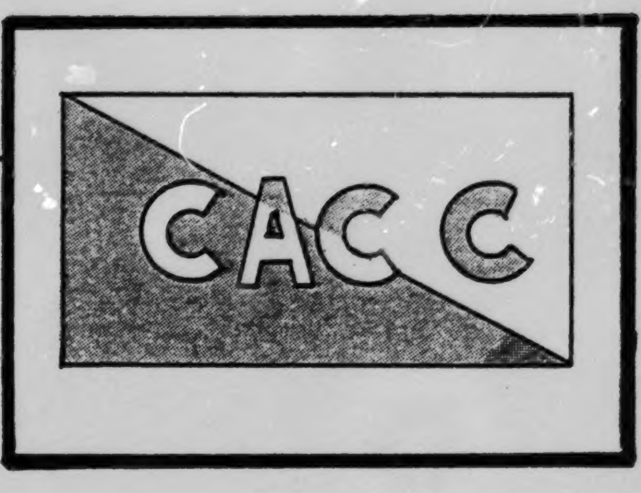
   C. CUT A DIAGONAL LINE THROUGH THE MASKING SHEET AS SHOWN. →



   D. NOW, TAPE THE AUTOPOSITIVE FILM TO THE CHIPBOARD, AS SHOWN: →



JOB STEPS



10. BASED ON WHAT YOU HAVE LEARNED IN THE FIRST SEVEN STEPS OF THIS MOD, MAKE A COMBINATION "DIAGONAL POSITIVE-REVERSE". YOUR FINAL RESULTS SHOULD LOOK SOMETHING LIKE THIS:

11. MAKE A CONTACT PRINT OF YOUR FINAL AUTOPOSITIVE (1401 10 014).

12. TAKE THE SELF-QUIZ ON THE NEXT PAGE. THEN SHOW YOUR DUPLICATE NEGATIVE, POSITIVE, THE ORIGINAL NEGATIVE AND THE DIAGONAL POSITIVE-REVERSE EXPERIMENT TO YOUR INSTRUCTOR FOR EVALUATION AND CREDIT.

ANSWERS:

(1) REMOVE, (2) SOLID BLACK, (3) FALSE, (4) FALSE, (5) B,
(6) A, (7) 10 CM, (8) KODAK DUPLICATING FILM, (9) ORTHO FILM,
(10) WOULD REQUIRE TOO LONG OF AN EXPOSURE

SELF-QUIZ - WRITE YOUR ANSWERS ON A SHEET OF PAPER. CHECK YOUR ANSWERS ON THE BOTTOM OF PAGE 5.

1. WITH AUTOPOSITIVE FILM THE YELLOW LIGHT EXPOSURE WILL __________ DENSITY.

2. IF AUTOPOSITIVE FILM IS DEVELOPED DIRECTLY FROM THE BOX, IT WILL BE ____________.

3. (TRUE OR FALSE) THE YELLOW LIGHT EXPOSURE TO AUTOPOSITIVE FILM HAS THE SAME EFFECT AS THE YELLOW FLASH DOES TO ORTHO FILM.

4. (TRUE OR FALSE) AUTOPOSITIVE FILM IS MADE TO USE ON A PROCESS CAMERA.

5. ANOTHER NAME FOR A "FLOP" IMAGE IS:

   A. UPSIDE-DOWN PRINT
   B. LATERAL REVERSAL
   C. HORIZONTAL TURN

6. TO MAKE A DUPLICATE NEGATIVE WITH AUTOPOSITIVE FILM, HOW SHOULD THE EMULSION SIDES BE IF THE LIGHT IS FROM ABOVE?

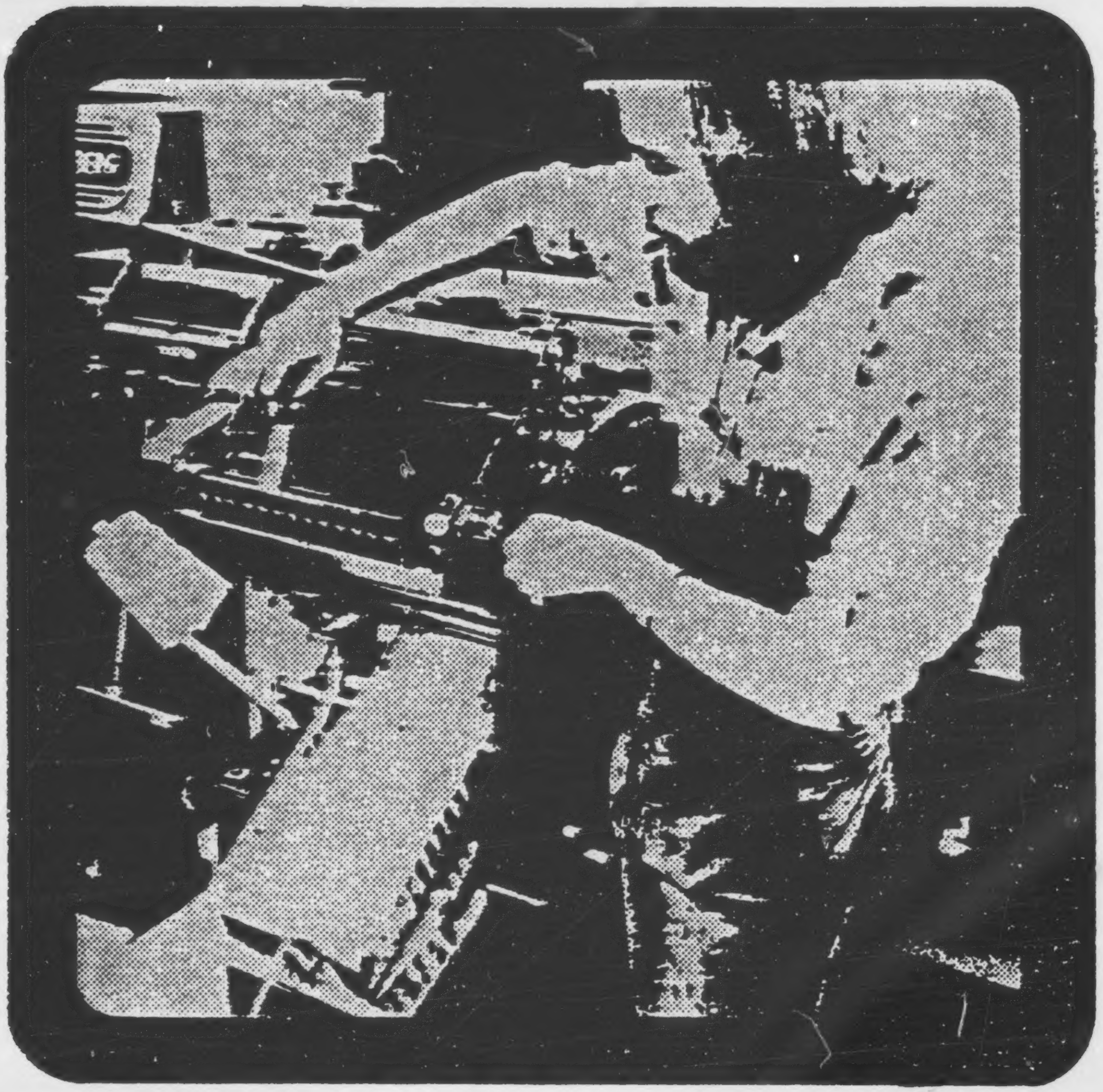
   A. BOTH UP
   B. BOTH DOWN
   C. TOGETHER

7. FOUR INCHES IS ______CM IN METRIC.

8. WHAT IS ANOTHER FILM THAT YOU HAVE USED THAT CAN MAKE A NEGATIVE FROM A NEGATIVE?

9. IF YOU DID NOT HAVE AUTOPOSITIVE FILM, WHAT FILM WOULD YOU USE TO MAKE A POSITIVE FROM A NEGATIVE?

10. WHY CAN'T WE EXPOSE AUTOPOSITIVE FILM WITH A POINT LIGHT SOURCE?



graphics

unit: CAMERA (PHOTOMECHANICAL REPRODUCTION)

capital area career center

module: 1401 10 018
1401 10 018 3 **date:** 8/77 **level:** I

skill title: SPECTRAL SENSITIVITY WITH PANCHROMATIC FILM

developed & written by: GLEN PETTIT

visuals by: LAURA EIBACH

WORD GUIDE

SPECTRAL SENSITIVITY - CAN RECORD COLORS.

PANCHROMATIC - SENSITIVE TO ALL COLORS.

FOGGING - GRAYNESS CAUSED BY UNWANTED LIGHT

TONE VALUES - SHADES OF GRAY.

PERFORMANCE OBJECTIVE

YOU ARE GOING TO LEARN:

HOW TO USE PANCHROMATIC FILM AND TO RECORD COLORS ON PAN FILM.

IN ORDER TO DO THIS YOU WILL NEED:

DARKROOM AND CHEMICALS
PROCESS CAMERA
PANCHROMATIC AND ORTHO FILM
COLOR CONTROL PATCHES, KODAK Q-13

WE WILL KNOW YOU CAN DO IT WHEN:

1. YOU CAN COMPLETELY DARKEN A DARKROOM AND USE PANCHROMATIC WITHOUT ANY FOGGING.
2. YOU CAN PROPERLY HANDLE, EXPOSE AND PROCESS PAN FILM.
3. YOU CAN COMPARE AND ESTIMATE TONE VALUES ON ORTHO AND PAN FILMS TO DETERMINE SPECTRAL SENSITIVITY.

A TAPE OF THIS MODULE IS AVAILABLE.

INFORMATION

PANCHROMATIC FILMS ARE SENSITIVE TO ALL COLORS (PAN MEANS 'ALL' AND CHROMATIC MEANS 'COLORS'). THE RANGE OF COLOR SENSITIVITY IS THE SAME AS THE HUMAN EYE. PANCHROMATIC FILM WILL REPRODUCE TONES (COLOR QUALITY OR VALUE) INTO SHADES OF GRAY.

PANCHROMATIC FILMS MUST BE HANDLED IN TOTAL DARKNESS. IN PRINTING, PAN FILM IS USED TO REPRODUCE COLORED COPY INTO A SINGLE COLORED TONE. YOU KNOW THAT BLACK AND READ WILL REPRODUCE THE SAME ON ORTHO FILM. WITH PAN FILM, WE CAN SEPARATE THE BLACK AND RED BY CONTROLLING THE EXPOSURE TIMES. PAN FILM IS ALSO USED WITH COLORED FILTERS TO HOLD (OR DROP-OUT) CERTAIN COLORS. YOU WILL DO THIS IN THE NEXT MOD 1401 10 019.

IN PRINTING WE COMMONLY DO COLOR-SEPARATION FOR PROCESS COLOR REPRODUCTION IN NATURAL COLOR. ALL PRINTED COLOR PHOTOGRAPHS ARE SHOT THROUGH FOUR SEPARATE PANCHROMATIC HALFTONE NEGATIVES, EACH EXPOSED THROUGH FILTERS.

IT IS VERY COMMON TO RECEIVE COPY FROM A CUSTOMER THAT WAS DRAWN IN BLUE OR GREEN INK, OR ON A COLORED PAPER. BLACK ON WHITE WILL PROVIDE THE BEST REPRODUCTION BUT WITH PAN FILM, YOU CAN MAKE A VERY GOOD NEGATIVE WHEN THE COPY OR PAPER IS COLORED.

KODAK Commercial Film 6127
KODAK Commercial Film 4127 (ESTAR Thick Base)

- A medium-speed, blue-sensitive film having moderately high contrast.
- Suitable for making negatives when copying continuous-tone subjects, for photogravure applications, and for other work not requiring green or red sensitivity.
- Low UV absorption reduces exposure variability between positives used to expose the same gravure resist.
- Coated on acetate base (6127) or dimensionally stable .007-inch (0.18 mm) ESTAR Thick Base (4127).

Safelight Use a KODAK Safelight Filter, No. 1 (red), or an equivalent safelight filter, in a suitable safelight lamp equipped with 15-watt bulb. Keep the film at least 4 feet (1.2 meters) from the safelight.

EXPOSURE

Meter Settings

Pulsed-Xenon Arc	White-Flame Arc	Tungsten or Quartz-Iodine	Daylight
ASA 12 12 DIN	ASA 20 14 DIN	ASA 8 10 DIN	ASA 50 18 DIN

These settings apply to meters marked for ASA or DIN speeds as indicated. The pulsed-xenon arc value indicates the film's relative speed to pulsed-xenon illumination as measured by a light integrator.

Example of Exposure: For a same-size (1:1) reproduction, exposing with two 1500-watt pulsed-xenon arc lamps in reflectors at 3 feet (0.9 m) from the center of the copyboard, use a trial exposure time of 4 seconds at *f*/22 with a 0.6 neutral density filter in the filter holder.

PROCESSING PROCEDURE

1. **Develop**

For Graphic Arts Applications
Using continuous agitation in a tray at 68°F (20°C)

Application	KODAK Developer	Time in Minutes
Gravure	DK-50	3
	HC-110 (Dilution C)	3
Gravure (Higher Contrast)	D-11	3
For Maximum Contrast	D-11	8

For Photographic Copying or General Applications*
Using continuous agitation in a tray or gaseous-burst agitation† in a tank‡

KODAK Developer	Time in Minutes 65°F 18.5°C	68°F 20°C	70°F 21°C	72°F 22°C	75°F 24°C
DK-50	2½	2	2	1¾	1½
DK-50 (1:1)	4½	3¾	3½	3	2½
HC-110 (Dilution B)	2¾	2½	2¼	2	1¾
HC-110 (Dilution C)	4¾	4½	4¼	4	3½
POLYDOL	4½	4	3¾	3½	3¼
D-11	9	8	7	6½	5½

*Development times are based on an exposure time of 1/25 second.
†1 second every 10 seconds with pressure to raise the solution level ⅝ inch (16 mm).
‡Development times of less than 5 minutes in a tank may produce poor uniformity and should be avoided.

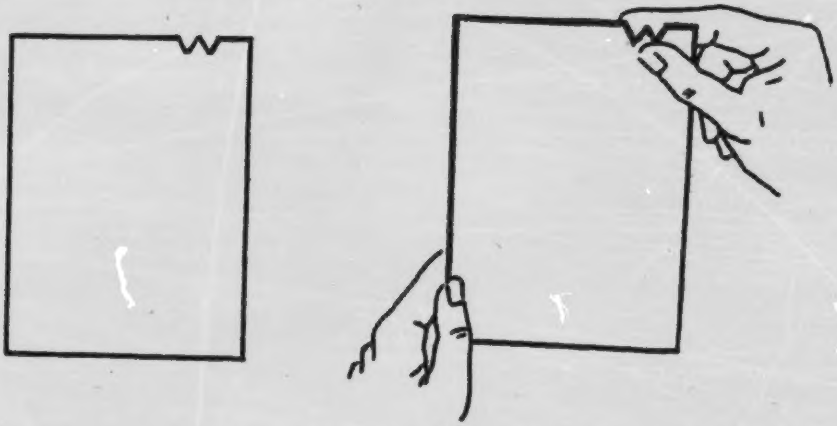
2. Rinse at 65 to 75°F (18.5–24°C) with agitation.
   KODAK Indicator Stop Bath—30 seconds
   KODAK Stop Bath SB-5 —30 seconds
   KODAK Stop Bath SB-1a —10 seconds
3. Fix at 65 to 75°F (18.5–24°C) with frequent agitation.
   KODAK Fixer —5 to 10 minutes
   KODAK Fixing Bath F-5—5 to 10 minutes
   KODAK Rapid Fixer —2 to 4 minutes
4. Wash in running water at 65 to 75°F (18.5–24°C).
   Acetate-base film (6127)—20 to 30 minutes
   ESTAR Base film (4127) —10 to 20 minutes
   To minimize drying marks, treat in KODAK PHOTO-FLO Solution, or wipe surfaces carefully with a KODAK Photo Chamois, a soft, wet viscose sponge, or a soft squeegee such as a windshield wiper blade. To save time and conserve water, use KODAK Hypo Clearing Agent.
5. Dry in a dust-free place.

INFORMATION

PAN FILM CAN ALSO BE USED TO MAKE HALFTONE NEGATIVE FROM A COLORED PHOTOGRAPH. A DARK COLOR PHOTOGRAPH WITH A LOT OF REDS, BROWNS, AND BLACKS CANNOT BE PRINTED USING ORTHO FILM BECAUSE OF THE DARK COLORS. THE SAME IS TRUE OF LIGHT COLORS. BECAUSE PAN FILM "SEES" THE ENTIRE SPECTRUM LIKE THE HUMAN EYE, IT CAN SEPARATE ALL THE COLORS INTO TONES OR GRAYS WHICH WILL PRINT.

SINCE PAN FILM MUST BE USED IN COMPLETE DARKNESS (ABSOLUTELY NO LIGHT, NO SAFELIGHTS), THERE ARE THREE WAYS TO TELL THE EMULSION SIDE:

1. FEEL THE CORNER OF THE FILM. THE BASE WILL BE HARD AND SMOOTH AND THE EMULSION SOFTER AND LESS SMOOTH.
2. MOISTEN YOUR THUMB AND FORFINGER AND THEN SQUEEZE THE CORNER OF THE FILM. THE EMULSION SIDE WILL STICK SLIGHTLY TO YOUR FINGER AND SOFTEN A LITTLE.
3. ON FULL SIZE SHEETS, KODAK HAS CUT A SMALL NOTCH ON THE TOP RIGHT EDGE OF THE FILM SO YOU KNOW THE EMULSION IS UP OR TOWARD YOU (THIS IS TRUE OF ALL PAN FILMS).



THE EXPERIMENT YOU WILL DO IN THIS MOD IS COMPARING THE "SPECTRAL SENSITIVITY" (HOW EACH COLOR AFFECTS THE FILM) OF PANCHROMATIC AND ORTHOCHROMATIC FILMS, AND LEARN HOW TO USE PAN FILM.

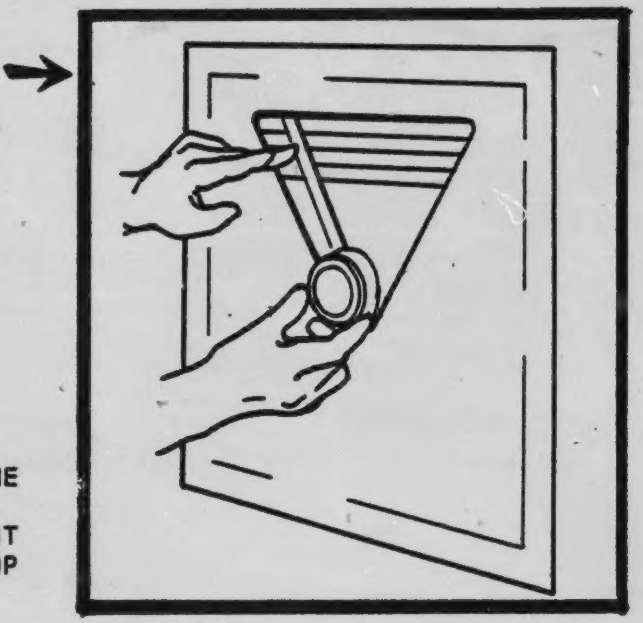
FOR YOUR COPY YOU WILL NEED THE KODAK GRAY SCALE AND KODAK COLOR CONTROL PATCHES (#2-13) AS WELL AS A 12-STEP GRAY SCALE. YOU MAY INCLUDE A POINT OR INK COLOR SAMPLE CHART. THIS COPY IS TO BE REDUCED DOWN TO 60% OR SO IT EASILY FITS ON 10 X 12.5 CM FILM.

JOB STEPS

1. FIRST, COMPLETE THE BASIC CAMERA MODS.

2. TAKE ALL EQUIPMENT & MATERIALS TO YOUR WORK AREA.

3. PLACE THE COPY ON THE COPY-BOARD (INCLUDE YOUR NAME, DATE AND MOD NUMBER). SET UP THE CAMERA AND PREPARE YOUR CHEMICALS (REGULAR ORHTO A & B DEVELOPER).

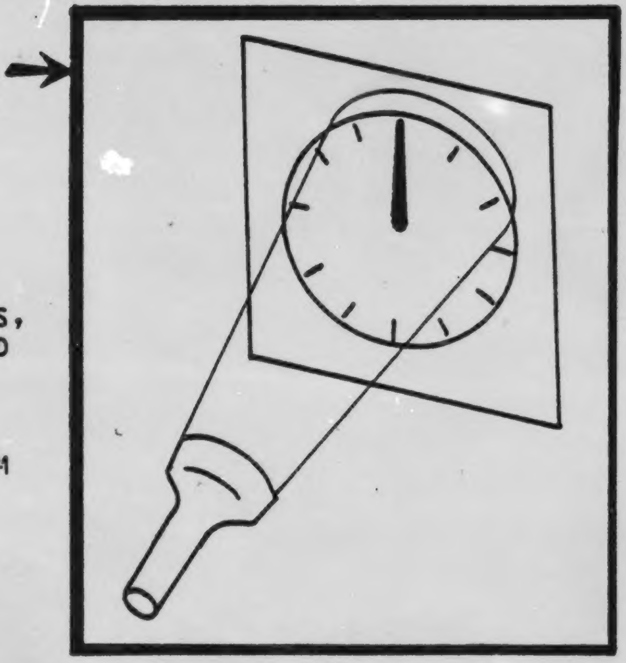


4. MAKE A NORMAL EXPOSURE ON 10 X 12.5 CM ORTHOCHROMATIC FILM WITH NORMAL PROCESSING.

5. FOR THE PANCHROMATIC FILM EXPOSURE, YOU WILL NEED SOMEONE TO HELP YOU KEEP THE DARKROOM COMPLETELY BLACK.

A. FIRST, CHECK THE EXPOSURE TIME AND SET THE CAMERA TIMER (ABOUT 1/4 THE VOLUME OF LIGHT AS FOR ORTHO, CHECK THE F:STOP SETTING TOO).

B. SET THE WALL TIMER FOR DEVELOPMENT TIME (2 1/2 MINUTES) AND CHARGE THE PHOSPHORESCENSE ON THE SECOND HAND WITH A WHITE FLASHLIGHT.



6. TO GET DARKROOM COMPLETELY DARK: SECURE ALL CURTAINS, ADD EXTRA DRAPES, TURN OFF ALL LIGHTS, COVER ANY PILOT OR SWITCH LIGHTS.

7. NOW TURN ON THE RED SAFELIGHTS, GET THE KODAK PAN FILM (#2568) AND MAKE SURE YOU KNOW WHERE TO FIND ALL THE TRAYS.

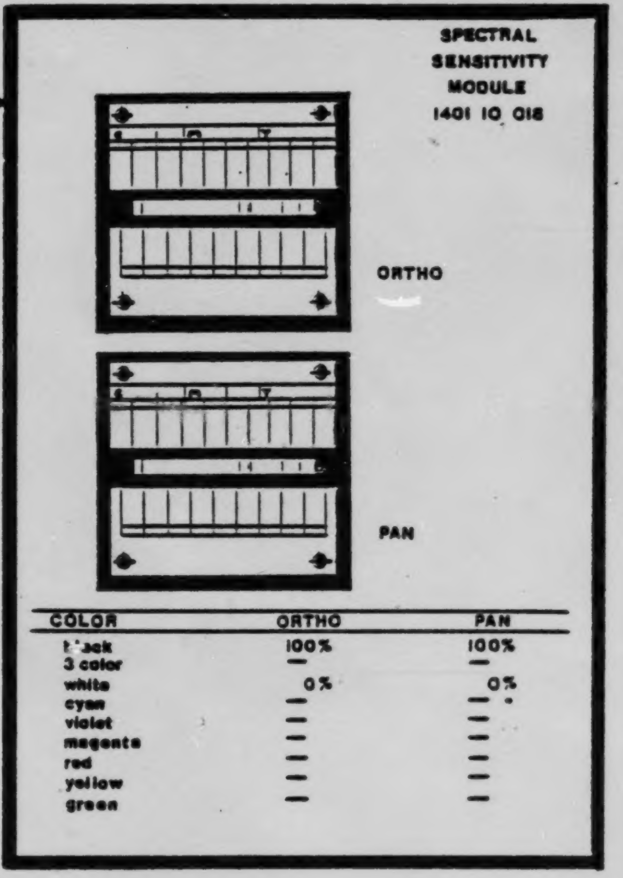
8. PUT MASKING TAPE ON THE VACUUM BOARD SO YOU CAN CENTER THE PAN FILM. HAVE YOUR HELPER STAY OUTSIDE THE ENTRANCE TO GUARD IT AND CALL OUT PROCESSING TIMES AS YOU NEED THEM. WHEN READY, TURN OUT THE SAFELIGHTS.

JOB STEPS

9. IN COMPLETE DARKNESS, PLACE A PIECE OF 10 X 12.5 CM PAN FILM ON THE VACUUM BOARD (HAVE YOUR INSTRUCTOR CUT THE FILM, IF NECESSARY), EMULSION UP. EXPOSE THE FILM.

10. AFTER EXPOSING, CAREFULLY TAKE THE PAN FILM TO THE DEVELOPER TRAY, START THE TIMER AND PROCESS FOR 2 1/2 MINUTES IN COMPLETE DARKNESS. AS YOU GO TO THE STOP BATH AND THEN FIXER, TELL YOUR HELPER TO WATCH THE TIME. ONCE YOU ARE IN THE WASH WATER, THE RED SAFELIGHTS CAN GO ON. RETURN THE DARKROOM TO NORMAL.

11. WHEN DRY, TAPE THE TWO NEGATIVES TO A PIECE OF WHITE PAPER AND COMPARE THE SPECTRAL SENSITIVITY OF EACH WITH THE ORIGINAL COLOR CONTROL PATCHES. MAKE A LIST OF THE NINE PATCHES AND ESTIMATE THE TONE % FOR EACH OF THE COLORS FOR BOTH FILMS. REMEMBER: A CLEAR AREA ON THE NEGATIVE WOULD PRINT 100% BLACK, A LIGHT DENSITY ON THE NEGATIVE MAY PRINT 90% BLACK.



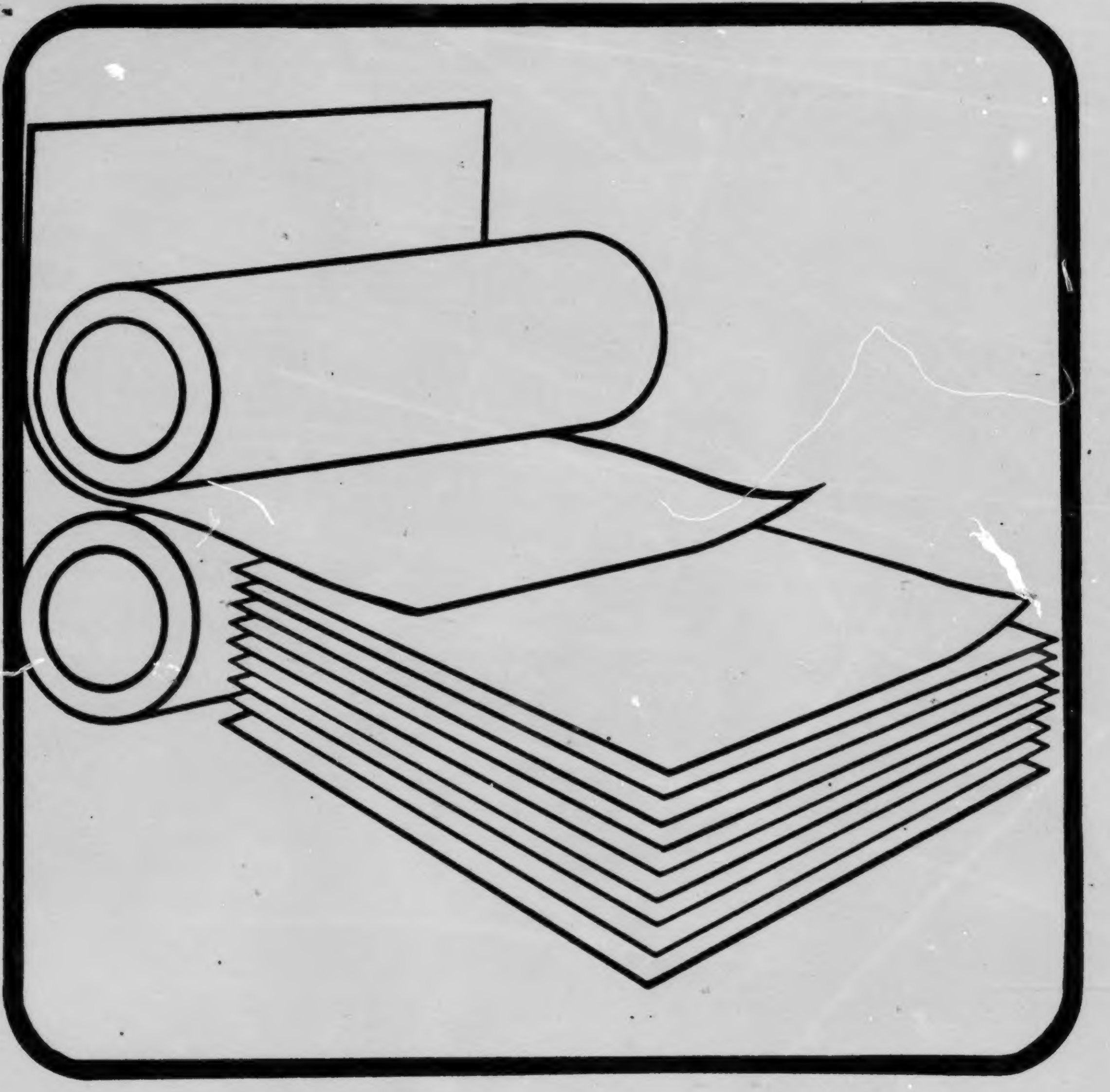
SPECTRAL SENSITIVITY MODULE 1401 10 018

ORTHO

PAN

COLOR	ORTHO	PAN
black	100%	100%
3 color	—	—
white	0%	0%
cyan	—	—
violet	—	—
magenta	—	—
red	—	—
yellow	—	—
green	—	—

12. WHEN FINISHED, TAKE THIS SPECTRAL SENSITIVITY SHEET TO YOUR INSTRUCTOR FOR EVALUATION AND CREDIT.



graphics

unit: CAMERA (PHOTOMECHANICAL REPRODUCTION)

capital area career center

1401 10 019
module: 1401 10 019 3 **date:** AUGUST 1977 **level:** II

skill title: SELECTIVE SPECTRAL SENSITIVITY WITH COLOR FILTERS

developed & written by: GLEN PETTIT

visuals by: LAURA EIBACH

WORD GUIDE

DROP-OUT OR HOLD - SO A COLOR WILL OR WILL NOT PRINT.

FILTER FACTOR - HOW MUCH LIGHT IS ABSORBED BY A FILTER.

PERFORMANCE OBJECTIVE

YOU ARE GOING TO LEARN:

HOW TO DROP-OUT OR HOLD A CERTAIN COLOR USING COLOR FILTERS AND ORTHOCHROMATIC AND PANCHROMATIC FILMS.

IN ORDER TO DO THIS YOU WILL NEED:

DARKROOM AND CHEMICALS
PROCESS CAMERA
ORTHOCHROMATIC AND PANCHROMATIC FILMS
KODAK FILTER SELECTOR CHART
COLOR FILTERS #47B, 58, 23A, AND 15
COLOR CONTROL PATCHES, #Q-13

WE WILL KNOW YOU CAN DO IT WHEN:

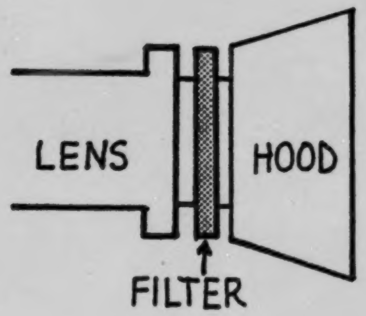
1. YOU CAN USE THE KODAK FILTER SELECTOR CHART TO SELECT FILTERS AND DETERMINE FILTER FACTORS.
2. YOU CAN SELECT ANY COLOR TO HOLD OR TO DROP, SELECT THE BEST FILTER AND BEST FILM AND PREDICT THE TONAL VALUE WHEN PROCESSED.
3. YOU CAN USE ORTHOCHROMATIC AND PANCHROMATIC FILMS TO HOLD OR DROP COLORS.

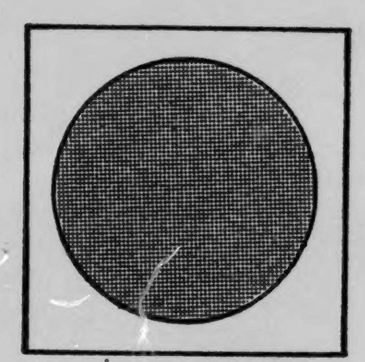
A TAPE OF THIS MODULE IS AVAILABLE.

INFORMATION

COLORED LINE COPY THAT IS NOT BLACK CAN BE PHOTOGRAPHED TO REPRODUCE AS BLACK. THIS IS CALLED A "HOLD". COLORED PAPER OR BACKGROUNDS CAN BE MADE TO REPRODUCE AS WHITE ALSO BY USING FILTERS. THIS IS CALLED A "DROP". USING A FILTER SELECTOR CHART, WE CAN SELECT WHICH FILTERS ARE REQUIRED TO DROP OR HOLD A COLOR (SELECTIVE SPECTRAL SENSITIVITY) AND LEARN THE FILTER FACTOR.

A FILTER IS A 8 X 8 CM (3" X 3") SQUARE PIECE OF THIN, SOFT, COLORED FILM. THIS GELATIN FILM IS KEPT IN A METAL FRAME AND PLACED IN FRONT OF THE LENS BARREL DURING EXPOSURE.




FILTER FRAME

SOME LENSES HAVE A SLOT CALLED A "WATERHOUSE STOP" BETWEEN THE GLASS ELEMENTS IN THE LENS ITSELF FOR A FILTER. SOME FILTERS ARE CEMENTED BETWEEN THIN LAYERS OF GLASS (LIKE FOR 35 MM PHOTOGRAPHY).

GELATIN FILTERS COST ABOUT $4 EACH, PLUS $4 FOR THE FRAME. THEY SCRATCH VERY EASILY, ARE HARD TO CLEAN AND THE OIL IN FINGER PRINTS WILL ETCH OR DESTROY THE GELATIN. THE GELATIN FILTERS WILL AGE WITH TIME AND FADE SO THEY SHOULD BE REPLACED EVERY FEW YEARS.

FILTERS HAVE NUMBERS AND LETTERS TO INDICATE WHAT THEY ARE:

1. BLACK AND WHITE COLOR FILTERS - LOWER NUMBERS (0, 1A, 2) ARE ULTRAVIOLET AND VERY LIGHT COLORS, HIGHER NUMBERS (50 UP) ARE DEEP DARK COLORS.

2. COLOR COMPENSATING FILTERS - WILL ALWAYS HAVE CC FIRST, THEN THE % OF DENSITY, THEN THE COLOR LETTER, FOR EXAMPLE (CC 10Y) IS 10% YELLOW, (CC 20M) IS 20% MAGENTA AND (CC 50C) IS 50% CYAN. COLOR COMPENSATING FILTERS ARE USED TO CORRECT SPECTRAL QUALITY FOR COLOR SEPARATIONS, COLOR PRINTING AND 35 MM PHOTOGRAPHY.

WORD GUIDE

LOGARITHMS - MATH EQUATION - WAY OF DETERMINING AMOUNTS.

INFORMATION

3. NEUTRAL DENSITY FILTERS - USED TO REDUCE LIGHT INTENSITY FOR VERY SENSITIVE FILMS, THEY WILL ALWAYS HAVE ND AND A NUMBER. THE NUMBERS ARE BASED ON LOGARITHMS FOR DENSITY, FOR EXAMPLE: (ND .3) IS 50% TRANSMISSION, (ND .6) IS 25%, (ND 1.00) IS 10% TRANSMISSION. THESE ARE THE MOST COMMON ONES THAT YOU WILL USE.

WHEN WHITE LIGHT GOES THROUGH ANY FILTER, IT IS REDUCED OR THE FILTER ABSORBS PART OF THE VOLUME OF WHITE LIGHT. WITH A THIN LIGHT FILTER LIKE (#8 YELLOW), YOU NEED TO INCREASE THE EXPOSURE TIME TO 2 TIMES THE NORMAL TIME TO GET THE PROPER VOLUME OF LIGHT TO THE FILM. FOR A DARKER FILTER LIKE (#47 BLUE), THE EXPOSURE TIME MAY BE INCREASED 10 TIMES, DEPENDING ON THE FILM AND SPECTRAL DECISION. THESE NUMBERS ARE CALLED FILTER FACTORS; 2 MEANS TWICE THE LIGHT, 10 WOULD BE 10 TIMES THE LIGHT, 25 WOULD MEAN 25 TIMES THE LIGHT.

IF THE BASIC EXPOSURE WAS 20 SECONDS AT F:16, A FILTER FACTOR OF 25 WOULD REQUIRE A 500 SECOND EXPOSURE AT F:16, OR 250 SECONDS AT F:11, OR 125 SECONDS AT F:8, OR 62 SECONDS AT F:5.6.

INSIDE THE KODAK FILTER SELECTOR CHART, YOU WILL FIND A NEUTRAL DENSITY CHART, A FILTER FACTOR CHART FOR ALL FILTERS AND LIGHT SOURCES AND A HOLD-DROP WHEEL WHICH TELLS YOU THE PROPER FILTERS TO USE FOR EACH COLOR.

FOR THIS MODULE, YOU WILL EXPERIMENT WITH SEVERAL FILTERS ON BOTH ORTHO AND PAN FILM TO DETERMINE THE SPECTRAL SENSITIVITY OF EACH FILM WITH EACH FILTER USED.

WORD GUIDE

COMPUTE - FIGURE OUT

JOB STEPS

1. FIRST, COMPLETE MOD 1401 10 018 "PANCHROMATIC FILM".

2. TAKE ALL EQUIPMENT & MATERIALS TO YOUR WORK AREA. GET THE KODAK COLOR CONTROL PATCHES (OR AN INSTRUCTOR-APPROVED SUBSTITUTE WITH ALL PRIMARY AND SECONDARY COLORS) AND FILTER SELECTOR CHART.

3. LOOK AT THE FILTERS: FIND THE COLOR FILTERS AND THE ND FILTERS.

4. PLACE YOUR COPY ON THE COPYBOARD. INCLUDE YOUR NAME, THE FILTER NUMBER AND COLOR FOR EACH DIFFERENT FILTER YOU USE (THIS WILL HELP LATER), AND A GRAY-SCALE. THEN, SET THE CAMERA FOR 60%.

5. USE ANY ONE OF THESE FILTERS FOR YOUR EXPOSURE: #47B, 58, 25 OR 15: SELECT ONE AND PLACE IT ON THE LENS IN THE FILTER HOLDER. THEN, FIND THE FILTER FACTOR FOR THIS FILTER AND COMPUTE THE NEW EXPOSURE TIME (IF TOO LONG, OPEN THE LENS).

6.. PLACE A 10 X 12.5 CM PIECE OF ORHTO FILM ON THE CAMERA AND THEN EXPOSE IT.

NOTE: DO NOT DEVELOP YET; WAIT FOR THE NEXT EXPOSURE AND PROCESS THE TWO ORTHO FILMS TOGETHER.

7. TEMPORARILY STORE THIS FILM IN AN EMPTY BOX.

8. SELECT A SECOND FILTER (AS IN STEP #5). INCLUDE THE NUMBER WITH YOUR COPY, COMPUTE THE EXPOSURE, CHECK YOUR SETTINGS AND EXPOSE A SECOND 10 X 12.5 CM PIECE OF ORTHO FILM.

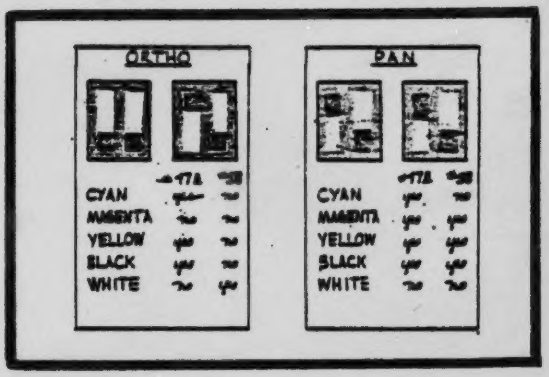
JOB STEPS

9. USING ORTHO CHEMICALS, PROCESS BOTH PIECES OF ORTHO FILM TOGETHER.

10. PREPARE THE DARKROOM FOR A COMPLETE BLACK-OUT LIKE YOU DID FOR MOD 1401 10 018 "PANCHROMATIC FILM".

11. USING THE SAME TWO FILTERS ON THE CAMERA, RECOMPUTE THE EXPOSURE TIMES AND EXPOSE TWO 10 X 12.5 CM PIECES OF PANCHROMATIC FILM LIKE YOU DID IN STEPS 4-9, ONE PIECE OF FILM WITH EACH FILTER.

12. WHEN FINISHED, PLACE THE TWO SHEETS OF EACH FILM ON TWO PIECES OF PAPER. MAKE A CHART (AS SHOWN) SHOWING WHICH FILTERS DROP OR HOLD EACH COLOR, AS SHOWN:



13. TAKE THE SELF QUIZ AND THEN SHOW YOUR CORRECTED ANSWERS AND THESE TWO EXPERIMENTS TO YOUR INSTRUCTOR FOR EVALUATION AND CREDIT.

SELF QUIZ:

WRITE YOUR ANSWERS ON A SEPARATE SHEET OF PAPER AND CHECK YOURSELF WITH THE CORRECT ANSWERS ON PAGE 7 OF THIS MOD.

1. USING THE KODAK FILTER SELECTOR CHART, IF THE EXPOSURE IS 12 SECONDS WHAT ARE THE CORRECT EXPOSURE TIMES (ON OUR CAMERA) FOR THE FOLLOWING FILTERS:

   A. #8
   B. #15
   C. #30
   D. #47B
   E. #58

2. WHAT IS THE TRANSMISSION PERCENTAGE FOR THE FOLLOWING NEUTRAL DENSITY FILTERS (USE THE FILTER SELECTOR CHART):

   A. .30ND
   B. .60ND
   C. 1.30ND
   D. 2.00ND
   E. 2.30ND

3. WHAT IS A CC 50M FILTER?

JOB STEPS

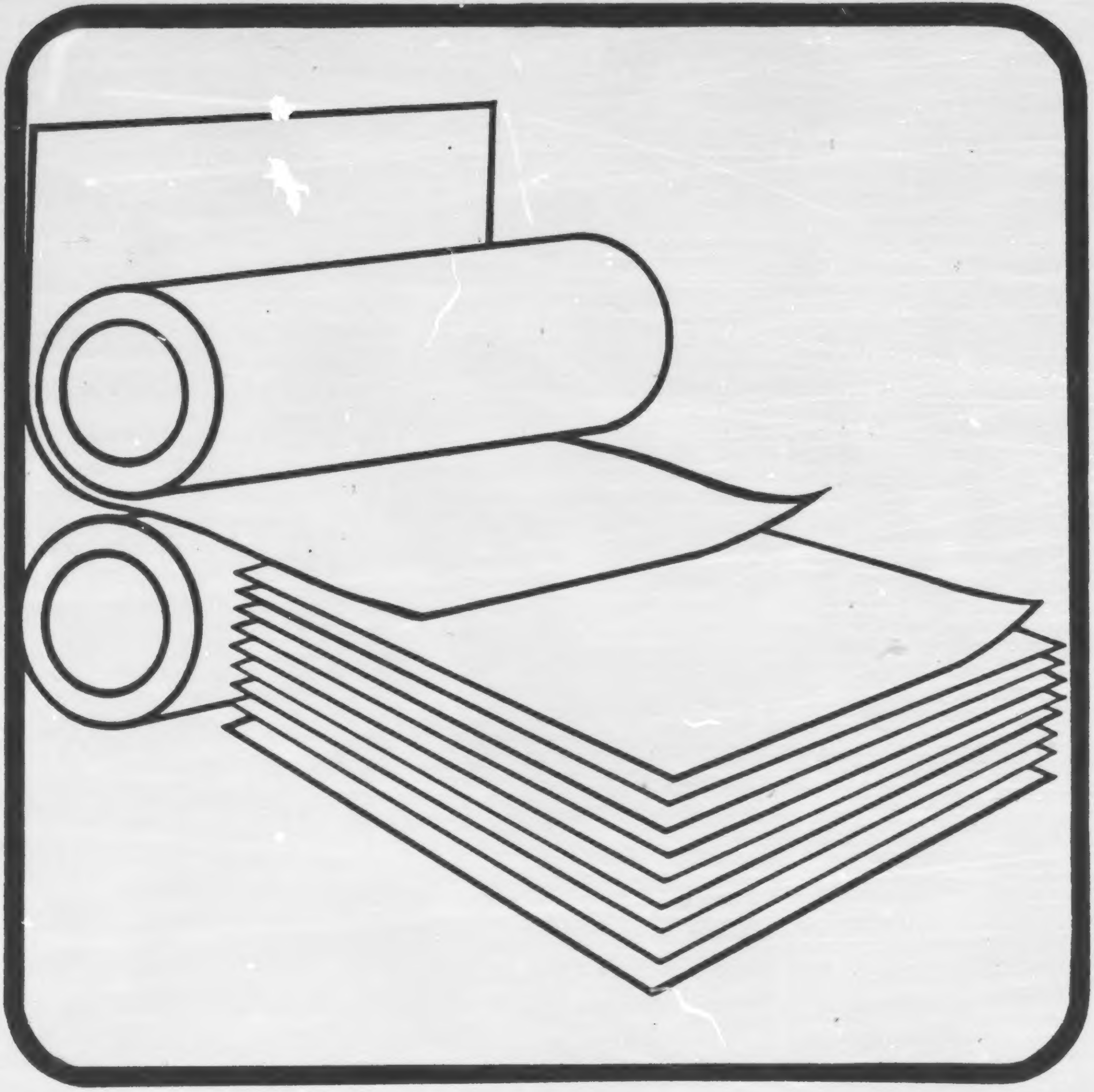
SELF QUIZ (CONT.)

4. IF YOU HAD A 3 SECOND EXPOSURE TIME AT F:8, WHAT TWO CORRECTIONS OR CHANGES WOULD YOU MAKE?

5. IF THE CORRECTED EXPOSURE TIME WITH A FILTER IS 200 SECONDS AT F:32, WHAT F:STOP MUST BE USED TO HAVE A 12 SECOND EXPOSURE?

ANSWERS TO SELF QUIZ

1. A) 18, B) 30, C) 120, D) 300, E) 30
2. A) 50%, B) 25%, C) 5%, D) 1%, E) 1/2%
3. COLOR COMPENSATING 50% MAGENTA FILTER.
4. YOU WOULD CLOSE DOWN THE LENS AND USE A NEUTRAL DENSITY FILTER.
5. F:8



graphics

unit: CAMERA (PHOTOMECHANICAL REPRODUCTION)

capital area career center

1401 10 020

module: 1401 10 020 3 **date:** AUGUST 1977 **level:** II

skill title: BASIC HALFTONE PHOTOGRAPHY

developed & written by: GLEN PETTIT

visuals by: LAURA EIBACH

WORD GUIDE

FLASH - A SHORT YELLOW LIGHT EXPOSURE
MAIN - A LONG WHITE LIGHT EXPOSURE
HIGHLIGHT - A SMALL BLACK DOT SHADOW - A LARGE BLACK DOT.

PERFORMANCE OBJECTIVE

YOU ARE GOING TO LEARN:

HOW THE FLASH AND MAIN EXPOSURES ARE USED TO MAKE FILM AND PMT HALFTONES AND HOW TO EVALUATE HALFTONE DOT SIZE.

IN ORDER TO DO THIS YOU WILL NEED:

PROCESS CAMERA
DARKROOM AND CHEMICALS
ORTHO FILM AND PMT MATERIALS
A PHOTOGRAPH
CONTACT HALFTONE SCREENS

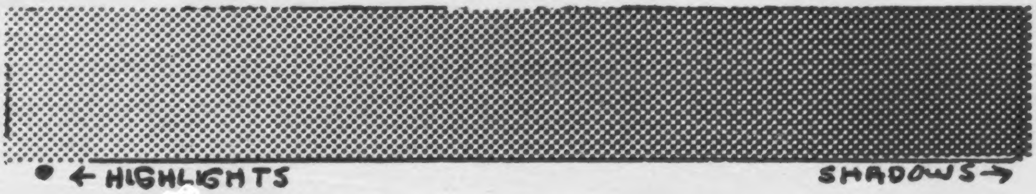
WE WILL KNOW YOU CAN DO IT WHEN:

1. YOU CAN MAKE AND EVALUATE A PMT PRINT HALFTONE.
2. YOU CAN MAKE AND EVALUATE A FILM NEGATIVE HALFTONE.
3. YOU CAN JUDGE A 10% HIGHLIGHT AND 90% SHADOW DOT OR HALFTONES.

A TAPE OF THIS MODULE IS AVAILABLE.

INFORMATION

A PHOTOGRAPH IS CALLED 'CONTINUOUS TONE COPY' BECAUSE IT HAS ALL THE SHADES OF GRAY FROM BLACK TO WHITE. THE PRINTING PRESS CANNOT PRINT SHADES OF GRAY. TO CREATE AN ILLUSION OF CONTINUOUS TONE, WE SCREEN A PHOTOGRAPH INTO DOTS; SMALL DOTS FOR LIGHT GRAYS AND LARGE DOTS FOR DARK GRAYS.



IN PRINTING, WE ALWAYS TALK ABOUT THE DOTS THAT WILL BE PRINTED ON THE PRESS. THE WHITE AREAS ON THE PHOTOGRAPH WILL HAVE VERY SMALL DOTS ON THE HALFTONE, CALLED "HIGHLIGHTS". THE BLACK AREAS ON THE PHOTOGRAPH WILL HAVE LARGE BLACK DOTS (OR SMALL WHITE OPENINGS) CALLED "SHADOW" DOTS.

THE DOTS ARE MEASURED IN SIZE; A VERY SMALL HIGHLIGHT DOT MAY BE 5%; A LARGE SHADOW DOT 95%; AND A PERFECT CHECKER-BOARD SQUARE DOT IS A 50% MIDDLETONE. IT TAKES SKILL AND EXPERIENCE TO LEARN TO EVALUATE DOT SIZES. YOU MUST ALWAYS USE A 10X MAGNIFYING GLASS WHEN YOU DO THIS.

FOR THIS MODULE, YOU WILL FIRST VIEW A SLIDE-TAPE BY KODAK: "HALFTONES AND OTHER TONES" AND THEN MAKE BOTH A PMT HALFTONE AND A NEGATIVE HALFTONE YOURSELF.

NORMALLY, USE A SPECIAL MORE EXPENSIVE, BETTER QUALITY ORTHO FILM ON WHICH TO MAKE HALFTONE NEGATIVES.

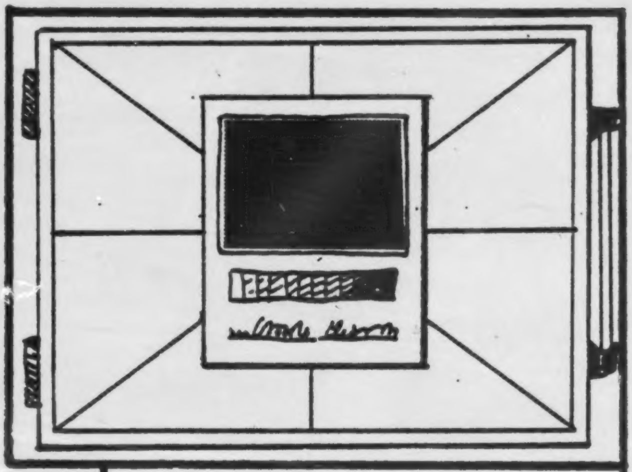
JOB STEPS

1. FIRST, COMPLETE THE BASIC LINE PHOTOGRAPHY AND PMT MODULES.

2. TAKE ALL EQUIPMENT & MATERIALS TO YOUR WORK AREA.

3. WATCH AND LISTEN TO THE KODAK SLIDE/TAPE "HALFTONES AND OTHER TONES" MODULE 1401 10 020.

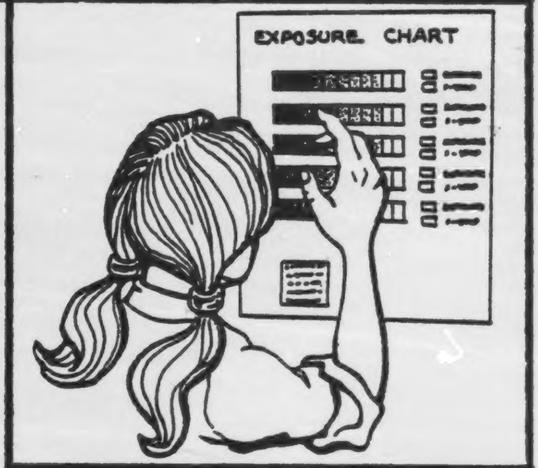
4. WITH YOUR INSTRUCTOR, SELECT A PERFECT PHOTOGRAPH (WHITE TO BLACK TONAL RANGE). PLACE THIS PHOTOGRAPH ON THE COPYBOARD WITH A 12-STEP GRAY SCALE, THE MOD NUMBER, AND YOUR NAME.



5. SET UP THE PROCESS CAMERA SO THE COPY WILL EASILY FIT ON 10 X 12.5 CM FILM.

6. CHECK THE EXPOSURE CHART FOR THE CORRECT EXPOSURES FOR A PMT HALFTONE. THE FIRST NUMBER WILL ALWAYS BE THE WHITE 'MAIN' EXPOSURE, THE SECOND IS THE YELLOW 'FLASH' EXPOSURE.

NOTE: SINCE OUR CONTACT SCREENS ALREADY HAVE A BUILT IN 'BUMP', IT WOULD BE RARE THAT YOU WOULD EVER NEED THIS THIRD EXPOSURE.

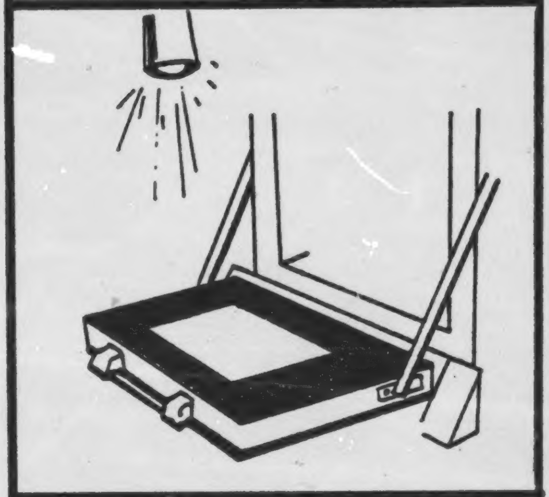


7. FOR FAST RESULTS, WE ARE GOING TO USE PMT FOR YOUR FIRST HALFTONES. PLACE A 10 X 15 CM PIECE OF PMT NEGATIVE ON THE VACUUM BOARD.

8. TURN ON VACUUM AND CAREFULLY ROLL ON THE 100 LINE PMT CONTACT SCREEN SO IT IS PERFECTLY FLAT, USE A ROLLER IF NECESSARY.

JOB STEPS

9. MAKE THE WHITE LIGHT MAIN EXPOSURE.



10. LEAVE THE VACUUM ON AND OPEN THE VACUUM BACK. SET THE TIMER AND MAKE THE FLASH EXPOSURE.

11. PROCESS YOUR PMT NEGATIVE WITH A RECEIVER SHEET. LOOK AT YOUR FINISHED PMT HALFTONE PRINT UNDER WHITE LIGHT. WHEN HELD AT ARM'S LENGTH AWAY, IT SHOULD LOOK LIKE THE ORIGINAL PHOTOGRAPH.

JOB STEPS

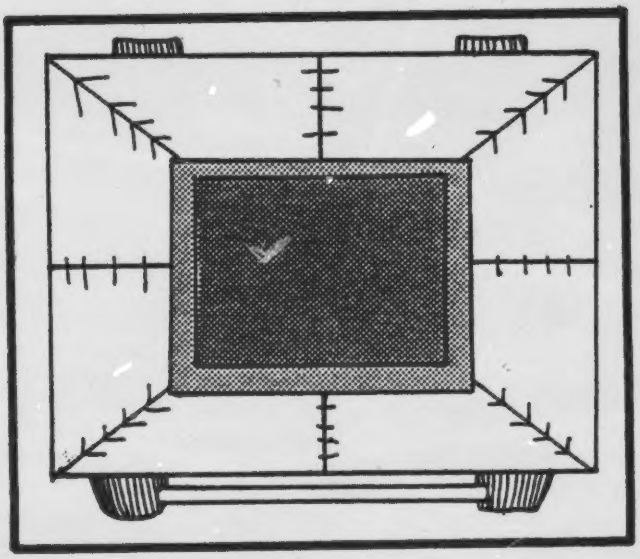
12. USING A 10X MAGNIFYING GLASS, EXAMINE THE HIGHLIGHTS (WHITE AREAS). YOU SHOULD HAVE A VERY SMALL BLACK DOT. EXAMINE THE SHADOWS (BLACK AREAS); THESE SHOULD BE LARGE BLACK DOTS WITH SMALL WHITE HOLES BETWEEN THEM.

13. LOOK AT YOUR GRAY SCALE. STEP #1 SHOULD HAVE A GOOD 10% HIGHLIGHT DOT AND STEP #10 SHOULD HAVE A GOOD 90% SHADOW DOT. MARK WHERE YOU FEEL THE 10%, THE 50%, AND THE 90% DOTS ARE IN THE GRAY SCALE AND IN THE HALFTONE.

14. SHOW THESE TO YOUR INSTRUCTOR FOR EVALUATION. IF THIS IS NOT A PERFECT HALFTONE PRINT, YOUR INSTRUCTOR WILL HELP YOU DECIDE HOW TO CORRECT EXPOSURES AND MAKE A PERFECT HALFTONE PRINT.

15. NOW, YOU ARE READY TO MAKE A HALFTONE NEGATIVE. USING THE SAME COPY AS IN STEP #3, SET UP THE CAMERA.

16. PLACE A PIECE OF 10 X 12.5 CM ORTHO (HALFTONE) FILM ON THE COPYBOARD AND PLACE A 100 LINE GRAY CONTACT SCREEN (NOT THE SAME PMT SCREEN) OVER YOUR FILM.



JOB STEPS

17. CHECK THE EXPOSURE CHART FOR THE CORRECT EXPOSURES FOR HALFTONE NEGATIVES. THEN, MAKE YOUR MAIN EXPOSURE AND YOUR FLASH EXPOSURE.

18. PROCESS THE FILM IN FRESH DEVELOPER (LESS THAN 1/2 HOUR OLD AND LIGHTLY USED). YOU SHOULD MIX ABOUT 100 ML EACH OF A & B ORTHO DEVELOPER INTO A SMALL TRAY FOR THIS SMALL FILM. ALWAYS KEEP YOUR PROCESSING PROCEDURE CONSISTANT AT 20° C. FOR 2 3/4 MINUTES.

19. WHEN DRY, EXAMINE THE HALFTONE NEGATIVE LIKE YOU DID IN STEP #2 BUT REMEMBER, THIS IS A NEGATIVE. THE CLEAR AREAS ON A NEGATIVE WILL PRINT AS BLACK, SO A LARGE CLEAR AREA DOT WOULD BE A LARGE SHADOW DOT.

20. ON THE NEGATIVE, MARK THE 10% AND 90% DOTS ON THE HALFTONE AND GRAY SCALE AND SHOW THESE TO YOUR INSTRUCTOR.

graphics

unit: CAMERA (PHOTOMECHANICAL REPRODUCTION)

capital area career center

module: 1401 10 021
1401 10 021 3 date: 8/77 level: II

skill title: HOW TO USE THE KODAK HALFTONE EXPOSURE COMPUTER

developed & written by: GLEN PETTIT

visuals by: MIKE SMITH

PERFORMANCE OBJECTIVE

YOU ARE GOING TO LEARN:

HOW TO USE THE KODAK HALFTONE EXPOSURE COMPUTER.

IN ORDER TO DO THIS YOU WILL NEED:

PROCESS CAMERA
DARKROOM & CHEMICALS
ORTHO FILM & PMT MATERIALS
PHOTOGRAPHS
CONTACT HALFTONE SCREENS
KODAK EXPOSURE COMPUTER

WE WILL KNOW YOU CAN DO IT WHEN:

1. YOU CAN CALCULATE THE MAIN AND FLASH EXPOSURES FOR PMT HALFTONE PRINTS AND NEGATIVE HALFTONES WITH 100% ACCURACY FOR NORMAL PHOTOGRAPHS.
2. YOU CAN SET UP AND CALIBRATE THE KODAK EXPOSURE COMPUTER AND DOUBLE-CHECK IT'S ACCURACY.

A TAPE OF THIS MODULE IS AVAILABLE.

WORD GUIDE

CALIBRATE - FIGURE OUT

EVALUATING - JUDGING QUALITY OF

INFORMATION

YOU CAN LEARN TO MAKE HALFTONES BY THE TRIAL AND ERROR METHOD, BUT A MORE ACCURATE METHOD IS TO USE THE KODAK HALFTONE EXPOSURE COMPUTER.

ONCE YOU HAVE CALIBRATED THE COMPUTER FOR YOUR EYE, OUR CONDITIONS AND PROCESSING, YOU SHOULD BE ABLE TO GET THE CORRECT MAIN AND FLASH ON THE FIRST TRIAL EVERY TIME. BECAUSE WE ALL SEE DOT SIZES AND WHITE AND BLACKS DIFFERENTLY AND BECAUSE EACH VARIES SLIGHTLY IN THE PROCESSING, IT IS BEST TO CALIBRATE IT YOURSELF FOR EACH SCREEN.

YOU LEARNED IN MOD 1401 10 020 "BASIC HALFTONE PHOTOGRAPHY", ABOUT MAIN AND FLASH EXPOSURES. IN THIS MOD, YOU WILL LEARN HOW TO DETERMINE THE CORRECT MAIN AND FLASH EXPOSURES. YOU WILL ALSO LEARN HOW TO SET-UP AND CALIBRATE THE KODAK EXPOSURE COMPUTER.

REMEMBER TO ALWAYS STAND IN THE SAME PLACE, UNDER THE SAME LIGHT WHEN EVALUATING REFLECTION DENSITY ON A PHOTOGRAPH FOR CONSISTANCY. ALWAYS USE FRESH FILM DEVELOPER AND KNOW HOW MUCH HAS EXPIRED WHEN MAKING HALFTONE NEGATIVES. KEEP THE PROCESSING CONSISTANT.

FOR THIS MOD, YOU WILL CALIBRATE THE EXPOSURE COMPUTER TWICE; FIRST FOR PMT HALFTONE PRINTS AND THEN FOR FILM NEGATIVES.

IT IS NECESSARY TO CALIBRATE THE CAMERA FOR EACH DIFFERENT PHOTOGRAPHIC PRODUCTION BECAUSE THE FILMS DO NOT ALL REPRODUCE THE SAME TONAL RANGES (FROM WHITE TO BLACK). ALWAYS USE A REFLECTION DENSITY GUIDE TO EVALUATE DENSITIES BECAUSE OF THE EFFECT OF SURROUNDING COLORS.

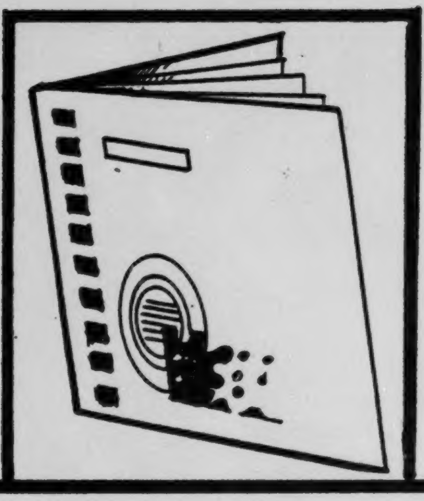
AT FIRST, THIS MAY SEEM CONFUSING AND DIFFICULT, BUT IT IS THE QUICKEST AND MOST ACCURATE WAY TO MAKE PERFECT HALFTONES. YOU HAVE FOUR DAYS (10 HOURS) TO LEARN THIS SO DON'T HURRY.

JOB STEPS

1. FIRST, COMPLETE MOD 1401 10 020 "BASIC HALFTONES" AND VIEW THE SLIDE/TAPE.

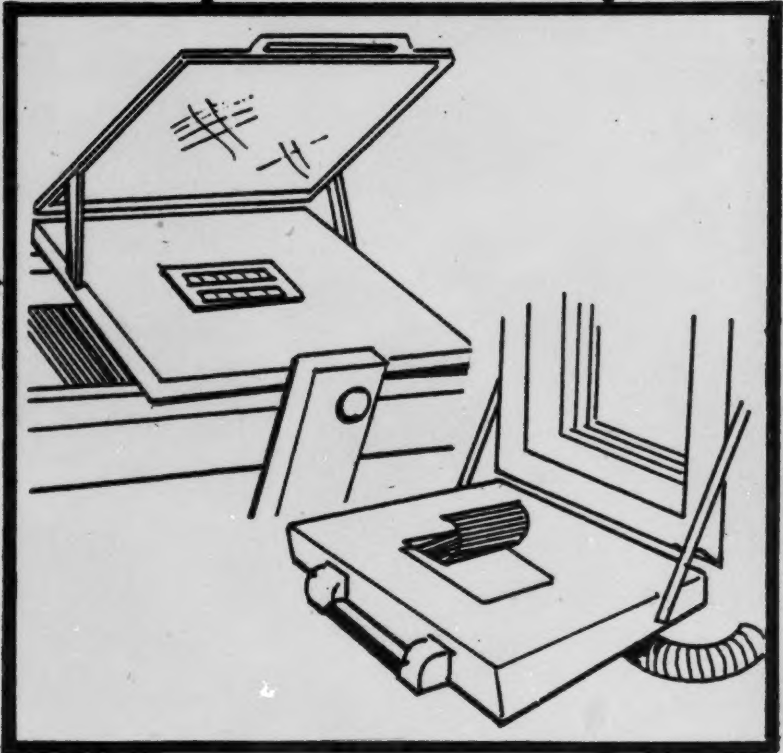
2. TAKE ALL EQUIPMENT & MATERIALS TO YOUR WORK AREA.

3. YOU WILL FOLLOW THE KODAK BOOKLET "HOW TO USE THE GRAPHIC ARTS EXPOSURE COMPUTER" FOR THIS MODULE, SO GET A COPY OF THIS BOOKLET AND READ IT.



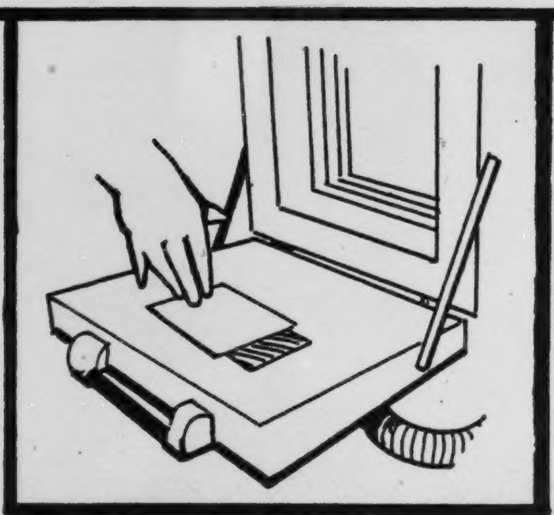
4. PLACE THE KODAK REFLECTION DENSITY GUIDE ON THE COPYBOARD (NO GRAY SCALE).

5. SET THE CAMERA FOR 50% USING A 10 X 25 CM PIECE OF PMT NEGATIVE MATERIAL, MAKE A 20 SECOND MAIN EXPOSURE AT F: 16 THROUGH A 100 LINE PMT CONTACT SCREEN.



6. PROCESS THIS PMT HALFTONE PRINT TEST.

7. PLACE ANOTHER PIECE OF 10 X 25 CM PMT NEGATIVE ON THE VACUUM BOARD WITH THE PMT CONTACT SCREEN OVER IT.

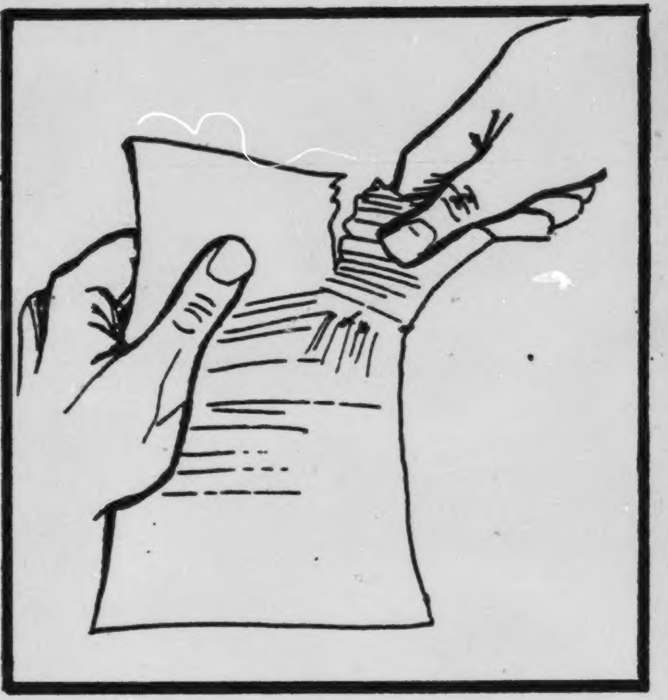


JOB STEPS

8. WITH A PIECE OF CHIPBOARD, UNCOVER ABOUT 3 CM OF THE PMT NEGATIVE EVERY 3 SECONDS. SET THE TIMER FOR 30 SECONDS AND WORK CAREFULLY BUT FAST. IT MAY HELP TO HAVE A PLASTIC RULER BESIDE THE CHIPBOARD.

9. MAKE YOUR YELLOW FLASH EXPOSURE TEST.

10. BEFORE PROCESSING YOUR PMT FLASH EXPOSURE TEST, TEAR OFF A SMALL PIECE OF THE CORNER WHERE IT RECEIVED THE MOST EXPOSURE (30 SECONDS).



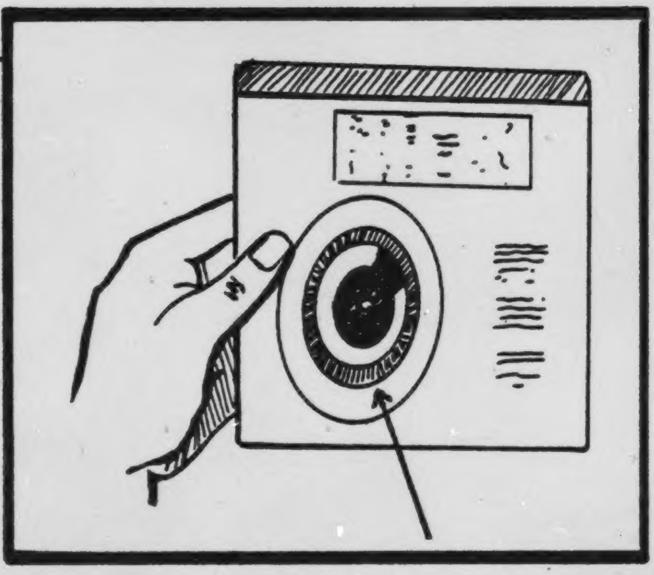
11. PROCESS YOUR PMT FLASH EXPOSURE TEST.

12. EXAMINE THE PMT PRINTS. ON THE DENSITY GUIDE, YOU SHOULD HAVE A 10% HIGHLIGHT DOT IN ONE OF THE FIRST FEW STEPS. THE 90% SHADOW WILL BE SOMEWHERE ON THE BOTTOM DENSITIES.

13. IF THE HIGHLIGHT DOT WAS A .20 DENSITY AND THE SHADOW DOT WAS A 1.30 DENSITY, SUBTRACT THE TWO FOR A BASIC DENSITY RANGE (BDR) OF 1.10.

$$\begin{array}{r} 1.30 \\ -\ .20 \\ \hline 1.10 \end{array}$$

14. SET THE COMPUTER: (WE DO NOT NEED TO SET THE INSIDE BLACK APERTURE SCALE FOR OUR CAMERA). SET THE HIGHLIGHT DENSITY ON THE RED CIRCLE FOR THE ACTUAL EXPOSURE TIME. USE A SMALL PIECE OF MASKING TAPE TO HOLD THE WHEELS IN PLACE.



15. DETERMINE FLASH: EXAMINE THE SERIES OF FLASH EXPOSURES YOU MADE AND DETERMINE WHICH OF THESE WILL GIVE A GOOD 90% SHADOW DOT. THIS IS THE BASIC FLASH EXPOSURE (BF).

16. NOW YOU ARE READY TO USE THE COMPUTER. TAKE THE PHOTOGRAPH YOU USED IN THE LAST MOD AND DETERMINE THE COPY DENSITY RANGE (CDR).

JOB STEPS

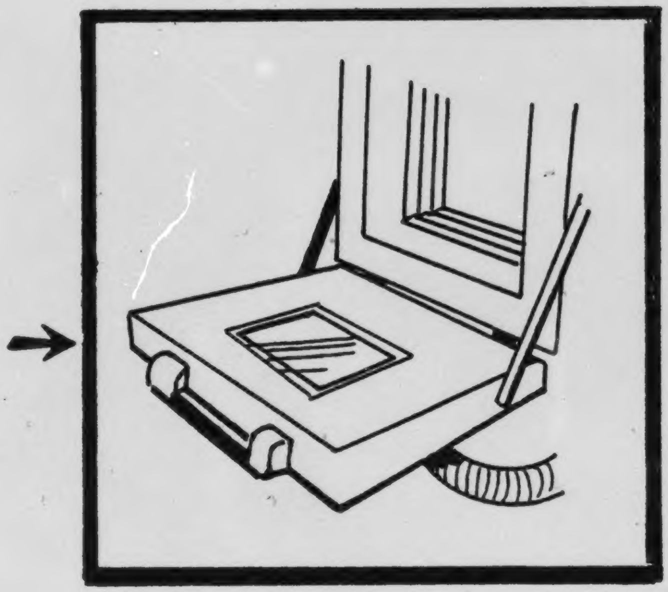
PLACE THE DENSITY GUIDE OVER THE PHOTOGRAPH AND COMPARE THE HIGHLIGHT AND SHADOW DENSITIES WITH THE GUIDE. WRITE DOWN THE COPY HIGHLIGHT AND SHADOW DENSITIES.

NOTE: THE MAIN EXPOSURE IS FOUND BY FINDING THE HIGHLIGHT DENSITY OF THE ORIGINAL ON THE RED SCALE OF THE COMPUTER AND READING THE EXPOSURE TIME.

18. SUBTRACT THE HIGHLIGHT DENSITY FROM THE SHADOW DENSITY TO GET THE COPY DENSITY RANGE.

19. SUBTRACT THE BDR FROM THE CDR TO FIND THE EXCESS DENSITY RANGE (EDR).

20. ON THE FLASH EXPOSURE TABLE, GO ACROSS THE TABLE FROM YOUR BASIC FLASH EXPOSURE TO THE COLUMN UNDER YOUR EDR NUMBER. THIS WILL BE YOUR FLASH EXPOSURE FOR THIS PHOTOGRAPH.



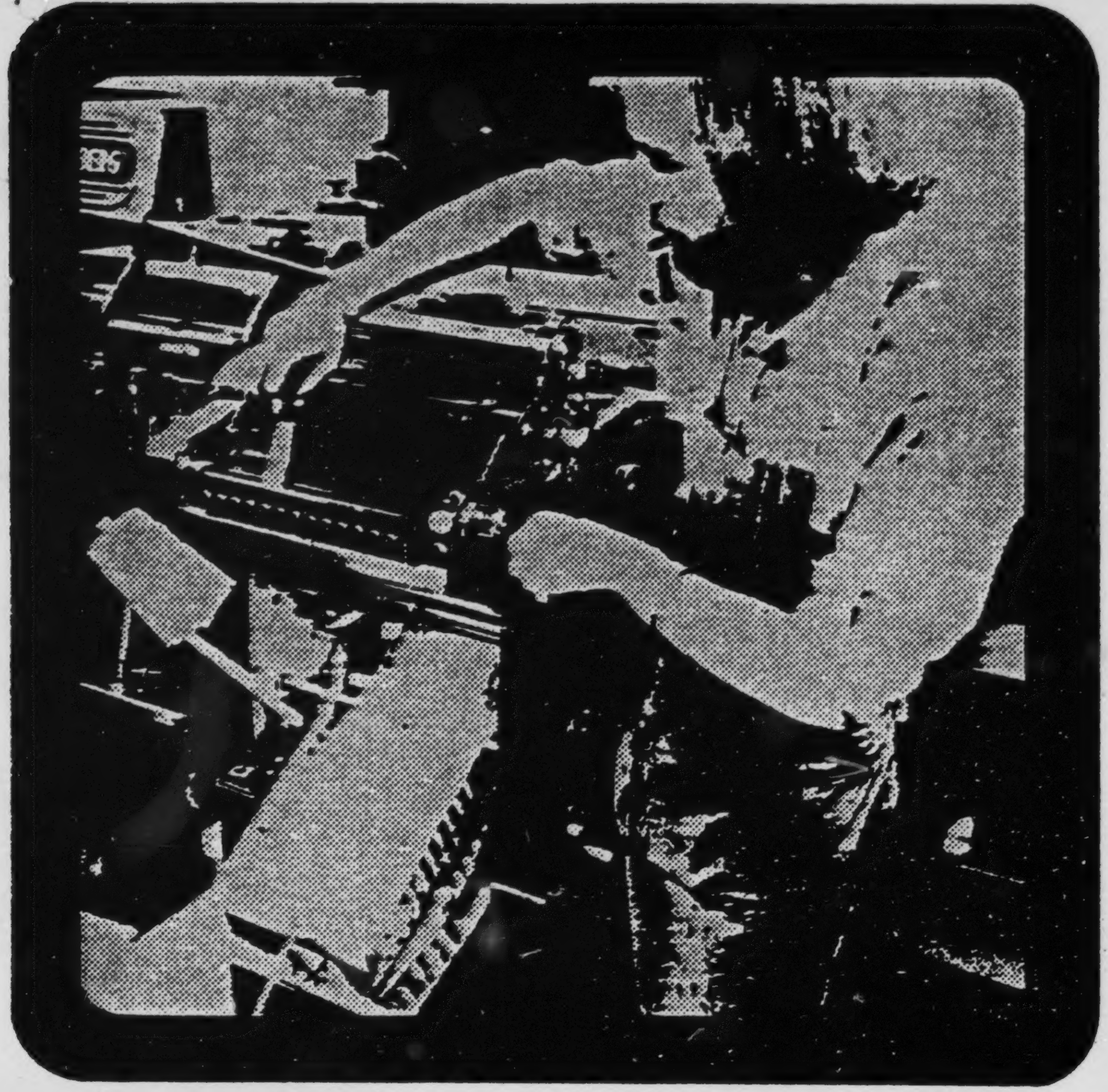
21. IF YOU ARE NOT SURE OF THIS PROCEDURE, ASK YOUR INSTRUCTOR FOR HELP. MAKE YOUR FIRST HALFTONE AT THESE EXPOSURES (INCLUDE A 12-STEP GRAY SCALE).

22. EVALUATE YOUR PMT HALFTONE PRINT FOR QUALITY. HAVE YOUR INSTRUCTOR EVALUATE IT.

23. WHEN CORRECT, MAKE AT LEAST TWO MORE PMT HALFTONE PRINTS FROM DIFFERENT PHOTOGRAPHS.

24. NOW REPEAT STEPS #4 THROUGH 23 USING 10 X 12.5 CM ORTHO FILM (FOR HALFTONES). YOU MUST BE MUCH MORE ACCURATE AND CAREFUL IN PROCESSING & EVALUATIION WITH FILM NEGATIVES. YOU WILL HAVE TO MIX FRESH ORTHO DEVELOPER OFTEN, O USE THE SMALL TRAYS.

WHEN YOU CAN MAKE THREE PERFECT HALFTONES BY EACH PROCESS, WITHOUT ANY ERRORS, YOU HAVE COMPLETED THIS MOD AND KNOW HOW TO USE THE EXPOSURE COMPUTER.



graphics

unit: CAMERA (PHOTOMECHANICAL REPRODUCTION)

capital area career center

module: 1401 10 022
1401 10 022 3
date: 8/77 **level:** II

skill title: MAKING PMT HALFTONE PRINTS

developed & written by: GLEN PETTIT

visuals by: MIKE SMITH

PERFORMANCE OBJECTIVE

YOU ARE GOING TO LEARN:

HOW TO MAKE PMT HALFTONE PRINTS FROM PHOTOGRAPHS THAT ARE ON SEVERAL KINDS OF PHOTOGRAPHIC PAPERS AND HAVE DIFFERENT TONAL RANGES.

AND IN ORDER TO DO THIS YOU WILL NEED:

PROCESS CAMERA AND DARKROOM

PMT MATERIALS

PMT HALFTONE SCREEN

8 PHOTOGRAPHS

GRAY SCALE AND HALFTONE COMPUTER

WE WILL KNOW YOU CAN DO IT WHEN:

1. YOU CAN EXAMINE A PHOTOGRAPH BEFORE MAKING A PMT HALFTONE PRINT AND ESTIMATE WHAT THE CORRECTED EXPOSURES SHOULD BE.
2. YOU CAN THEN EVALUATE DOT QUALITY AND DOT SIZE ON YOUR PRINT, RE-EXPOSE IF NECESSARY AND PRODUCE A PRINTABLE PMT HALFTONE PRINT THE SECOND TIME.

INFORMATION

IT WOULD BE IDEAL IF ALL PHOTOGRAPHS FOR A JOB WERE OF THE SAME QUALITY, TAKEN BY THE SAME PHOTOGRAPHER AND PRINTED ON THE SAME PHOTOGRAPHIC PAPER. MOST JOBS WITH HALFTONES WILL HAVE SEVERAL DIFFERENT KINDS OF PHOTOGRAPHS. LOOK FOR:

DIFFERENT TEXTURE PAPERS
DIFFERENT PAPER SURFACES
DIFFERENT DEVELOPERS
AGE OF THE PRINT
SHARPNESS OF DETAIL AND FOCUS
GRAIN SIZE AND TEXTURE

ALL OF THE ABOVE REQUIRE SPECIAL THOUGHT AND TREATMENT IF YOU ARE GOING TO PRODUCE GOOD PMT HALFTONE PRINTS THAT CAN BE PRINTED.

IT IS NECESSARY TO TRAIN YOUR EYE TO SEE THE CORRECT TONAL RANGE. THAT'S WHY YOU SHOULD ALWAYS USE THE GRAY SCALE AND KEEP IT CLEAN. AS YOU LEARNED IN MOD 1401 10 21, "CALIBRATING THE CAMERA FOR HALFTONE EXPOSURES", THERE ARE MANY TONES OF WHITE AND BLACK. IT IS UNUSUAL TO GET A GOOD PHOTOGRAPH THAT HAS A TRUE WHITE (0%) OR MORE THAN A 75% BLACK.

FOR THIS MOD YOU WILL BE GIVEN AT LEAST EIGHT PHOTOGRAPHS, INCLUDING:

AN UNDEREXPOSED PRINT
AN OVEREXPOSED PRINT
A POLAROID PRINT
A COLOR PRINT
AN OLD, YELLOWED PRINT
A GLOSSY FINISH PRINT
A MATT FINISH PRINT

THE OBJECTIVE IS TO MAKE A GOOD PMT HALFTONE PRINT FROM EACH PHOTOGRAPH. USING YOUR JUDGEMENT, THE GRAY SCALE AND THE KODAK HALFTONE COMPUTER, TRY TO COMPUTE THE CORRECT FLASH AND MAIN EXPOSURE. YOU MAY SHOOT SOME OF THESE "PROBLEM" PHOTOGRAPHS 4 OR 5 TIMES (THAT HAPPENS IN INDUSTRY TOO).

IT WOULD HELP IF YOU WRITE ALL YOUR INFORMATION ON A PIECE OF PAPER (CDR, FLASH AND MAIN) AND INCLUDE THIS WHERE YOU EXPOSE EACH DIFFERENT PHOTOGRAPH.

WORD GUIDE

ILLUMINATION - LIGHTING.

JOB STEPS

1. COMPLETE MODS 1401 10 020 AND 1401 10 021 BEFORE STARTING THIS MOD.

2. TAKE ALL EQUIPMENT AND MATERIALS TO YOUR WORK AREA.

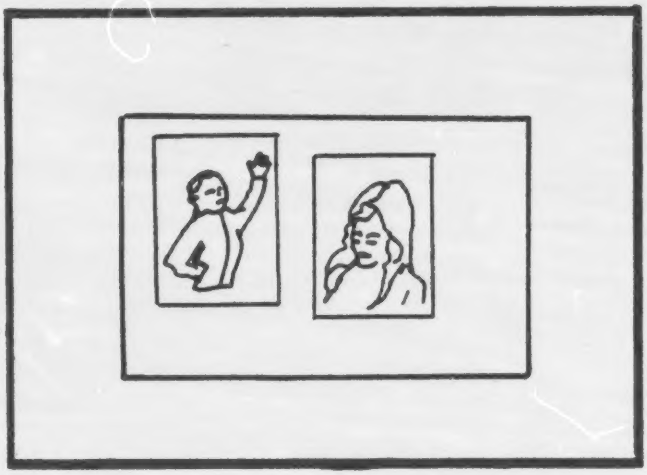
3. USE THE INFORMATION AND EXPOSURE TIMES YOU COMPUTED IN THE LAST MOD FOR MAKING PMT HALFTONE PRINTS. GET THE KODAK HALFTONE COMPUTER AND GRAY SCALE AND COMPUTE THE CDR, FLASH AND MAIN EXPOSURES FOR THE FIRST OF YOUR EIGHT PHOTOGRAPHS.

NOTE: BE SURE TO ALWAYS STAND IN THE SAME PLACE WITH THE SAME ILLUMINATION TO DETERMINE EXPOSURES.

4. WRITE DOWN THE CDR, MAIN EXPOSURE, FLASH EXPOSURE, YOUR NAME AND DATE ON A SMALL PIECE OF PAPER AND INCLUDE THIS WITH YOUR SHOT.

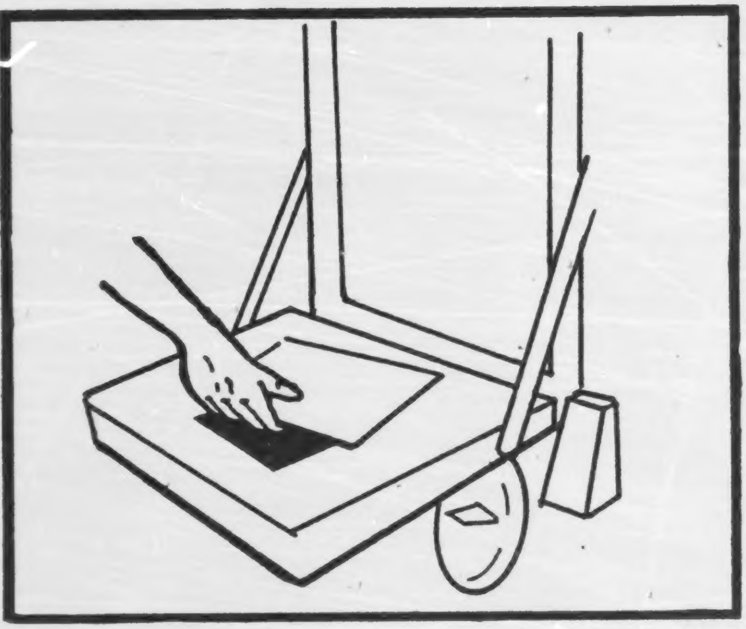
NOTE: TRY TO KEEP THE FINAL PMT PRINT SIZE TO 10 X 12 CM. SINCE SOME OF YOUR ORIGINAL PHOTOGRAPHS MAY BE LARGER, YOU'LL HAVE TO REDUCE.

5. TO SOME COST AND MATERIALS, TRY TO MAKE TWO DIFFERENT EXPOSURES ON EACH PIECE OF 10 X 12 CM PMT NEGATIVE MATERIAL, WHENEVER POSSIBLE.



JOB STEPS

6. PLACE YOUR COPY, GRAY SCALE AND INFORMATION SHEET ON THE CAMERA AND SET THE EXPOSURE TIMES.



7. PLACE THE PMT NEGATIVE MATERIAL ON THE VACUUM BOARD, PUT THE PMT HALFTONE SCREEN OVER THIS, CLOSE AND THEN MAKE YOUR MAIN AND FLASH EXPOSURES.

8. AFTER EXPOSURE, RETURN THE SCREEN AND PROCESS THE PMT NEGATIVE TO THE RECIEVER.

9. EVALUATE YOUR SHOTS. BE SURE YOU LOOK AT THE HIGHLIGHT AND SHADOW DOTS IN THE ORIGINAL PHOTOGRAPHS, NOT THE GRAY SCALE. DO YOU HAVE A 10% HIGHLIGHT AND A 90% SHADOW? USE A MARKER AND INDICATE THESE ON THE PMT HALFTONE PRINT.

10. CONTINUE EXPOSING ALL EIGHT PHOTOGRAPHS UNTIL YOU HAVE MADE THE BEST PMT HALFTONE PRINT FOR EACH ONE.

11. WHEN FINISHED, HAVE YOUR INSTRUCTOR CHECK YOUR WORK. SHOW ONLY THE BEST EIGHT PMT HALFTONE PRINTS AND BE PREPARED TO ANSWER QUESTIONS.

ANSWERS TO SELF QUIZ

1. COPY DENSITY RANGE
2. BASIC DENSITY RANGE
3. 1,
4. YELLOW OA
5. 10%
6. GETS SMALLER
7. GETS SMALLER
8. DOWN
9. REDUCE MAIN EXPOSURE
10. INCREASE FLASH EXPOSURE

graphics

unit: CAMERA (PHOTOMECHANICAL REPRODUCTION)

capital area career center

1401 10 023

module: 1401 10 023 3 **date:** 8/77 **level:** II

skill title: MAKING HALFTONE NEGATIVES

developed & written by: GLEN PETTIT

visuals by: MIKE SMITH

PERFORMANCE OBJECTIVE

YOU ARE GOING TO LEARN:

HOW TO MAKE HALFTONE NEGATIVES FROM PHOTOGRAPHS THAT ARE ON SEVERAL DIFFERENT KINDS OF PHOTOGRAPHIC PAPERS AND HAVE DIFFERENT TONAL RANGES.

IN ORDER TO DO THIS YOU WILL NEED:

PROCESS CAMERA AND DARKROOM

ORTHO FILM AND CHEMICALS

HALFTONE SCREEN

8 DIFFERENT PHOTOGRAPHS

GRAY SCALE AND HALFTONE NEGATIVE COMPUTER

WE WILL KNOW YOU CAN DO IT WHEN:

1. YOU CAN EXAMINE YOUR PHOTOGRAPHS BEFORE MAKING A HALFTONE AND ESTIMATE THE CORRECTED EXPOSURES.
2. YOU CAN EVALUATE DOT QUALITY AND DOT SIZE ON THE HALFTONE NEGATIVE, RE-EXPOSE IF NECESSARY, AND PRODUCE A PRINTABLE HALFTONE NEGATIVE THE SECOND TIME.

A TAPE OF THIS MODULE IS AVAILABLE.

INFORMATION

AS YOU HAVE LEARNED, IT IS MUCH MORE DIFFICULT TO EVALUATE SHADOW AND HIGHLIGHT DOT SIZE ON A HALFTONE NEGATIVE. THE PROBLEMS WITH ORIGINAL PICTURES ARE THE SAME AS THOSE WITH PMT HALFTONE PRINTS. HOWEVER, YOU CAN USUALLY PRODUCE BETTER QUALITY HALFTONE NEGATIVES. WITH A HALFTONE NEGATIVE, YOU MAKE THE PLATE DIRECTLY FROM THE NEGATIVE. BUT, WHEN YOU MAKE AND PASTE-UP A PMT HALFTONE PRINT, IT MUST BE SHOT AGAIN AS A LINE NEGATIVE AND THEN EXPOSED TO THE PLATE, THUS LOSING A LITTLE QUALITY.

WITH PMT HALFTONES, 65, 85, AND 100 LINE SCREENS ARE COMMON. WITH HALFTONE NEGATIVES, 100, 110, 120, AND 133 LINE SCREENS ARE COMMON. HIGH-QUALITY MAGAZINES (LIKE NATIONAL GEOGRAPHIC) USE 150 LINE SCREENS ON ALL THEIR PICTURES AND ALSO A 3% TO 97% DOT RANGE BECAUSE OF THE PAPER, PLATE, AND PRESS QUALITY. IN THE NEXT MOD (1401 10 024), YOU WILL EXPERIMENT WITH DOT RANGE IN HALFTONES AND ALSO ACTUALLY MAKE A PLATE AND PRINT YOUR HALFTONE NEGATIVES ON THE OFFSET PRESS WITH SEVERAL DIFFERENT KINDS OF PAPERS.

HINTS:

A. WHEN DOING PRODUCTION HALFTONES, IF YOU HAVE SEVERAL SIMILAR PHOTOGRAPHS OF THE SAME SIZE AND SAME MAIN AND FLASH EXPOSURE, SHOOT THEM ALL TOGETHER ON LARGER FILM.

B. DURING THE LAST 15 SECONDS OF DEVELOPMENT, YOU CAN WATCH AND CONTROL THE HIGHLIGHT AND SHADOW DOT WITH A 10X MAGNIFYING GLASS WHILE HOLDING THE NEGATIVE TO THE RED VIEWING LIGHT.

C. IF YOUR HALFTONES HAVE BEEN COMING OUT CORRECT EVERY TIME, SHOOT SEVERAL AHEAD AND TEMPORARILY STORE THEM IN A LIGHT-TIGHT FILM BOX, THEN PROCESS THEM TOGETHER (SEVERAL AT ONCE OR 15 SECONDS APART).

D. TWO DIFFERENT PHOTOGRAPHS (WITH DIFFERENT EXPOSURES) CAN BE SHOT ON THE SAME PIECE OF FILM IF YOU COVER UP 1/2 THE FILM DURING EACH EXPOSURE. THIS WILL CUT COPYBOARD LOADING & FILM PROCESSING TIME IN HALF, BUT IT IS TRICKY, SO PLAN AHEAD. REMEMBER: THE SCREEN MUST BE HELD TIGHTLY ON THE VACUUM BOARD; USE A SMALL COVER.

YOUR INSTRUCTOR WILL GIVE YOU SOME PHOTOGRAPHS FOR THIS MOD. FOR FULL CREDIT, YOU MUST PRODUCE AT LEAST 12 GOOD, HALFTONE NEGATIVES. SINCE IT MAY TAKE SIX HOURS OR MORE OVER A PERIOD OF SEVERAL WEEKS, MAKE A SILVERPRINT OR DYLUX PROOF OF EACH NEGATIVE. BE SURE YOUR NAME, DATE, EXPOSURES, AND THE GRAY SCALE SHOWS FOR EACH HALFTONE YOU MAKE, TO PROVE IT IS YOURS. SOME OF THE PHOTOGRAPHS MAY BE A PART OF A RUSH PRODUCTION JOB THAT COMES IN WHILE YOU ARE WORKING.

WORD GUIDE

JOB STEPS

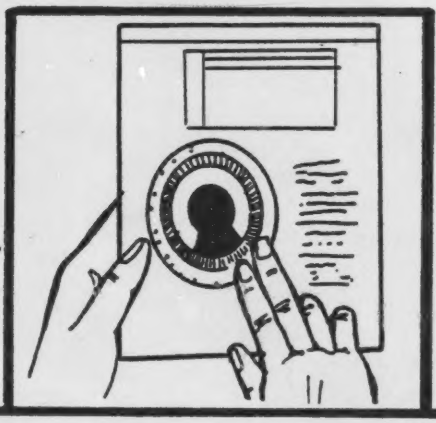
COMPUTED - FIGURED OUT.

ACCEPTABLE - GOOD ENOUGH TO WORK WITH.

1. COMPLETE MOD 1401 10 022, "MAKING PMT HALFTONE PRINTS" BEFORE STARTING THIS MOD.

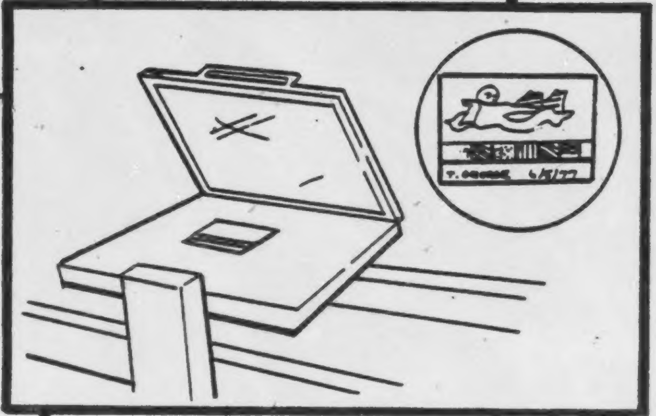
2. TAKE ALL EQUIPMENT AND MATERIALS TO YOUR WORK AREA.

3. USING THE INFORMATION AND EXPOSURE TIMES YOU COMPUTED IN THE HALFTONE CALIBRATION MOD, DETERMINE THE CDR AND THE MAIN AND FLASH EXPOSURES FOR EACH PHOTOGRAPH.



4. MAKE AN ACCEPTABLE HALFTONE NEGATIVE FOR EACH.

NOTE: BE SURE YOUR NAME, DATE, EXPOSURES, AND GRAY SCALE SHOW ON EACH NEGATIVE. IF A REPRODUCTION SIZE IS NOT GIVEN, HAVE EACH HALFTONE FIT ON A 10 X 12 CM (4" X 5") PIECE OF ORTHO FILM, INCLUDING THE INFORMATION AND GRAY SCALE.

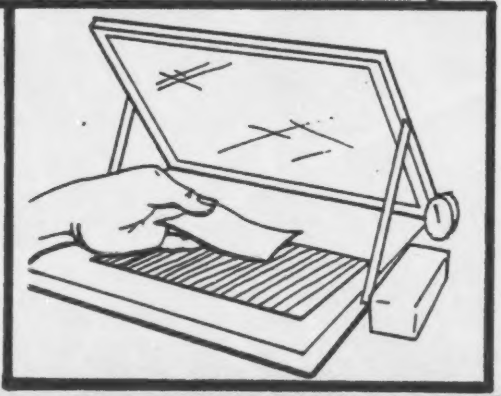


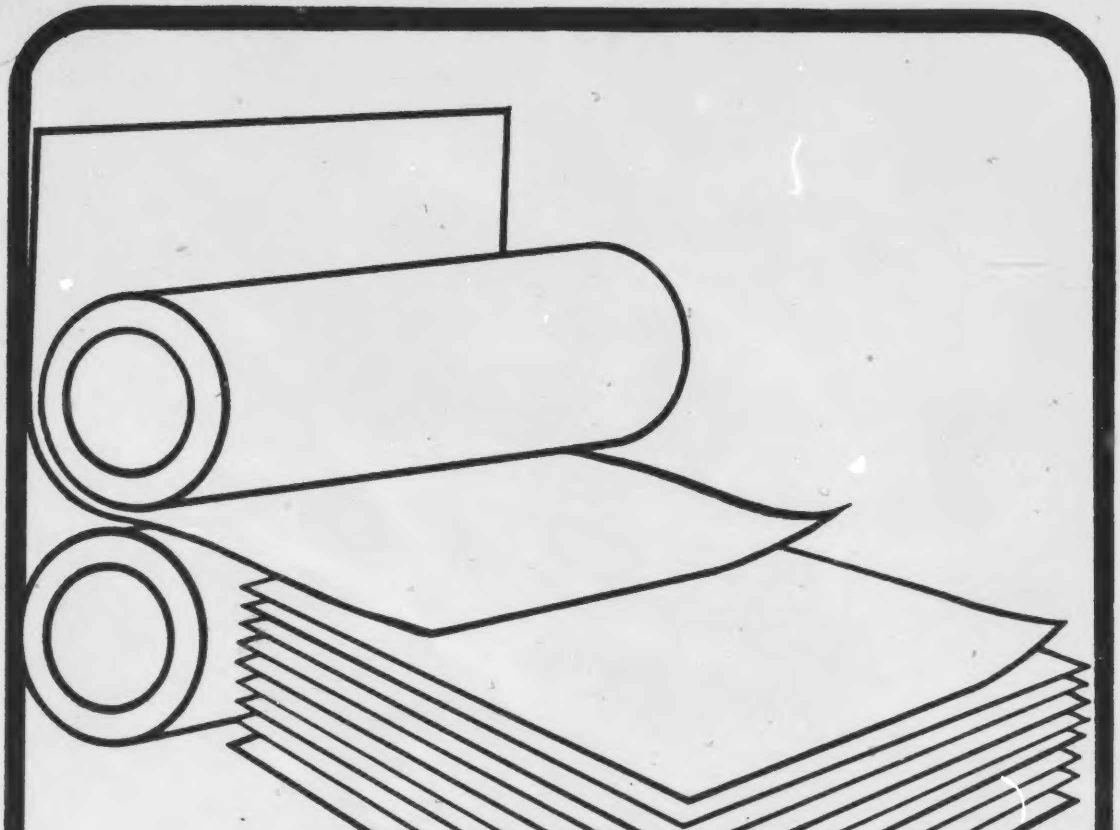
5. AFTER FIXING, USING A 10X MAGNIGYING GLASS, CHECK YOUR DOT SIZE ON THE HALFTONE. AN ACCEPTABLE PRINT MUST HAVE A 10% HIGHLIGHT AND A 90% SHADOW (5 TO 95% WOULD BE EXCELLENT).

NOTE: REMEMBER, WHEN YOU ARE LOOKING AT A NEGATIVE, EVERYTHING IS THE REVERSE OF THE PRINT. CHECK EACH NEGATIVE BEFORE STARTING THE NEXT SHOT.

6. WHEN THE HALFTONE NEGATIVES ARE DRY, LAY THEM ON A PIECE OF SILVERPRINT OR DYLUX PROOFING PAPER AND MAKE A PROOF PRINT.

NOTE: BE CONSERVATIVE; TRY TO GET AS MANY PER PROOF AS POSSIBLE AND BE SURE THE INFORMATION SHOWS ON EACH ONE - THIS IS WHAT YOUR INSTRUCTOR WILL EVALUATE.





graphics

unit: CAMERA (PHOTOMECHANICAL REPRODUCTION)

capital area career center

1401 10 024
module: 1401 10 024 3 **date:** AUGUST 1977 **level:** III

skill title: EXPERIMENTING WITH HALFTONE DOT RANGE AND CORRECTIONS

developed & written by: GLEN PETTIT

visuals by: LAURA EIBACH

PERFORMANCE OBJECTIVE

YOU ARE GOING TO LEARN:

HOW TO EVALUATE HALFTONE DOT RANGE AND REPRODUCTION ABILITY WHEN PRINTED.

IN ORDER TO DO THIS YOU WILL NEED:

PROCESS CAMERA AND FILM

DARKROOM AND CHEMICALS

OFFSET PRESS AND PLATE

STRIPPING TOOLS

A PHOTOGRAPH

WE WILL KNOW YOU CAN DO IT WHEN:

1. YOU CAN EXPERIMENT WITH MAIN AND FLASH EXPOSURES TO VARY DOT RANGE ON HALFTONES.
2. YOU CAN COMPARE DOT RANGE REPRODUCTION ABILITY ON VARIOUS STOCKS IN THE HIGHLIGHT AND SHADOW AREAS ON A HALFTONE BEFORE AND AFTER PRINTING.

A TAPE OF THIS MODULE IS AVAILABLE.

INFORMATION

IT IS VERY EASY TO LOSE DOT QUALITY WITH OFFSET PRINTING. THE CAMERA PERSON CAN REPRODUCE AND HOLD MUCH FINER QUALITY ON FILM THAN THE PRESS CAN PRINT. AS A CAMERA PERSON, YOU MUST FREQUENTLY TAKE A PRINTED SHEET AND EVALUATE HOW WELL YOUR HALFTONES ARE PRINTING. THE CAMERA PERSON MUST CORRECT HIS/HER WORK AND DOT RANGE, SO IT IS PRINTING THE BEST IT CAN.

ON AN OFFSET, THE HIGHLIGHT DOTS WILL USUALLY DROP (BECOME SMALLER) SLIGHTLY AND THE SHADOW DOTS WILL USUALLY ENLARGE, SOMETIMES 3 OR 4%. EACH PRESS, PLATE, PAPER, AND PRESS OPERATOR WILL PRODUCE SLIGHTLY DIFFERENT OFFSETS.

A DOT MUST TRANSFER THREE TIMES:

1. FROM THE NEGATIVE TO THE PLATE,
2. FROM THE PLATE TO THE RUBBER BLANKET, AND
3. FROM THE BLANKET TO THE PAPER.

IN ADDITION, THE DOT MUST HOLD THE RIGHT AMOUNT OF INK AND THEN TRANSFER IT TWICE-A-SECOND.

A QUICK WAY TO SEE WHAT SIZE DOT THE PLATE AND PRESS CAN HOLD IS TO RUN A PERCENTAGE SCALE AND SOME TEST NEGATIVES. THIS IS WHAT YOU WILL DO FOR THIS MODULE.

WORD GUIDE

CALIBRATE - FIGURE OUT

JOB STEPS

1. FIRST, COMPLETE MOD 1401 10 023 "MAKING HALFTONE NEGATIVES.

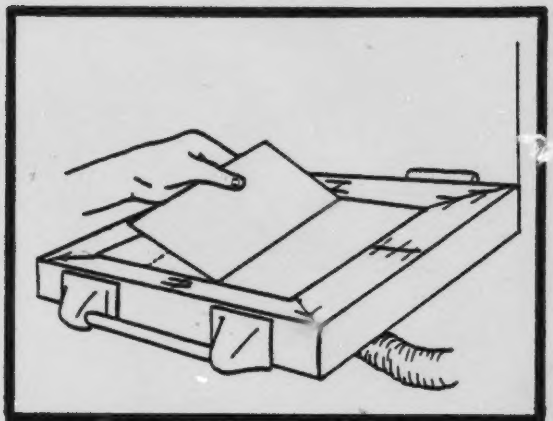
2. TAKE ALL EQUIPMENT & MATERIALS TO YOUR WORK AREA.

3. WATCH AND LISTEN TO THE GATF SLIDE/TAPE, "INTRODUCTION TO THE HALFTONE PROCESS".

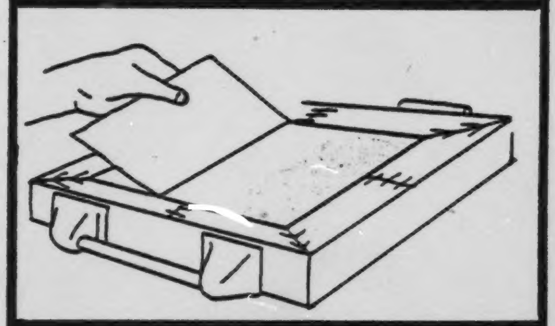
4. SELECT A PERFECT PHOTOGRAPH (WHITE TO BLACK TONAL RANGE) AND CALIBRATE ITS MAIN AND FLASH EXPOSURE TIMES WITH THE EXPOSURE COMPUTER.

5. SET UP THE CAMERA SO THE IMAGE AREA WILL EASILY FIT ON 10 X 12.5 CM ORTHO FILM. PLACE THE FILM AND GRAY CONTACT SCREEN ON THE VACUUM BOARD.

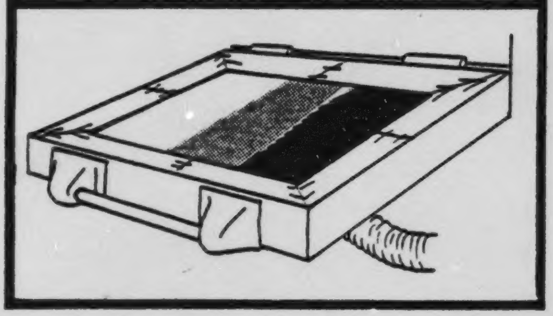
JOB STEPS



6. WITH A LARGE PIECE OF CHIPBOARD, COVER 2/3 OF THE FILM (SHORT DIRECTION) AND GIVE IT A 5 SECOND EXPOSURE (DO NOT TURN OFF THE VACUUM OR MOVE THE SCREEN).



7. MOVE THE CHIPBOARD SO ONLY 1/3 OF THE FILM IS COVERED AND GIVE IT ANOTHER 5 SECOND EXPOSURE.



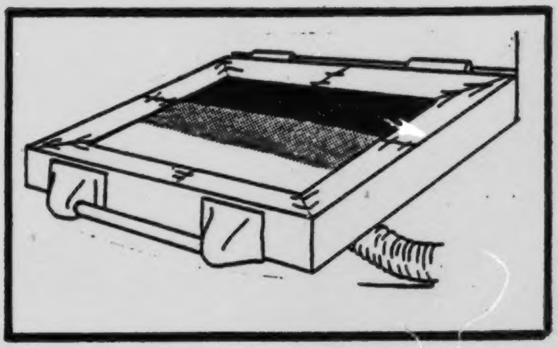
8. NOW, REMOVE THE CHIPBOARD AND GIVE THE ENTIRE FILM 5 SECONDS LESS THAN THE NORMAL MAIN EXPOSURE (SO 1/3 HAS 5 LESS THAN NORMAL, 1/3 HAS 5 SECONDS MORE THAN NORMAL AND THE CENTER 1/3 IS NORMAL).

9. GIVE THIS FILM THE NORMAL FLASH EXPOSURE AND PROCESS.

10. PLACE A SECOND PIECE OF ORTHO FILM ON THE CAMERA, GIVE IT A NORMAL MAIN EXPOSURE AND STEP OFF THE FLASH EXPOSURE.

JOB STEPS

11. WITH A LARGE PIECE OF CHIPBOARD, COVER 2/3 OF THE FILM (LONG DIRECTION) FOR 5 SECONDS. THEN, MOVE THE CHIPBOARD TO COVER ONLY 1/3, EXPOSE FOR 5 SECONDS AGAIN.

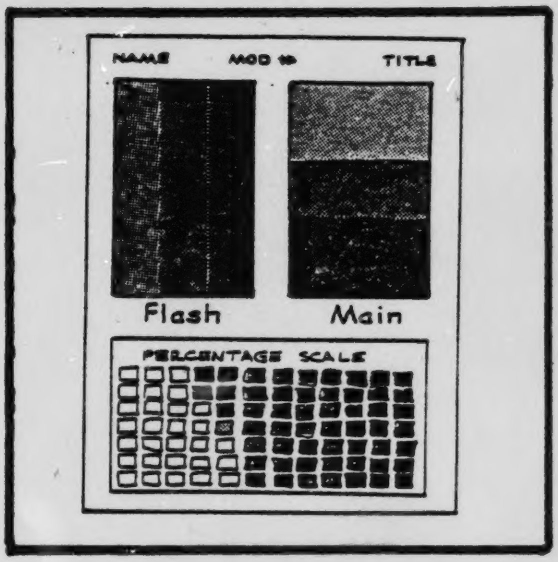


12. UNCOVER THE FILM AND EXPOSE FOR 5 SECONDS LESS THAN THE NORMAL FLASH.

13. PROCESS THE FILM.

14. MAKE A DUPLICATE NEGATIVE OF THE BYCHROME PERCENTAGE SCALE.

15. MAKE A CONTACT PRINT OF THESE TWO NEGATIVES AND PERCENTAGE SCALE TOGETHER TO EVALUATE DOT QUALITY AND COMPARE WITH THE PRINTED SHEET.



16. TYPE UP YOUR NAME, MOD NUMBER TITLE AND THE WORDS "FLASH TEST" AND "MAIN TEST" AND MAKE A LINE NEGATIVE OF THESE SO THEY CAN BE STRIPPED-UP.

17. STRIP-UP THE PERCENTAGE SCALE, YOUR TWO EXPOSURE TEST HALFTONES AND THE LINE COPY SO IT CAN EASILY FIT ON 8 1/2" X 11" PAPER ON THE AB DICK 350 OFFSET.

JOB STEPS

18. MAKE A 3M TYPE E PLATE.

19. IF YOU HAVE COMPLETED THE BASIC AB DICK OFFSET MODS, FIND OUT WHEN YOU CAN RUN THESE ON THE OFFSET PRESS (ABOUT 100 COPIES).

20. READY YOUR 8 1/2" X 11" STOCK FOR THIS TEST, INCLUDING:

50 SHEETS, 20# WHITE BOND
25 SHEETS 20# BOND, COLORS (THREE OF EACH)
25 SHEETS, 5 EACH OF SEVERAL DIFFERENT FINISHES
5 SHEETS COATED STOCK

21. WHEN READY FOR THE PRESS, LOAD AND PLACE AT LEAST 200 SHEETS OF SCRAP PAPER TO GET YOUR INK UP. RUN ALL YOUR STOCK WITH THIS DOT RANGE TEST PLATE.

JOB STEPS

22. WHEN FINISHED, COMPARE THE HIGHLIGHT AND SHADOW DOT SIZES ON THE VARIOUS PAPERS WITH THE CONTACT PRINT. ON THE PERCENTAGE SCALE, CIRCLE THE HIGHLIGHT AND THE SHADOW DOT WHICH HELD BEST FOR THE SCREEN RULING YOU USED ON THE FOLLOWING PAPERS:

WHITE 20# BOND
CANARY 20# BOND
GREEN 20# BOND
COATED STOCK
TEXTURED OFFSET

23. SHOW YOUR NEGATIVES, CONTACT PRINT AND ALL THE PRINTED PAPER TO YOUR INSTRUCTOR FOR EVALUATION AND CREDIT.

graphics

unit: CAMERA (PHOTOMECHANICAL REPRODUCTION)

capital area career center

1401 10 025

module: 1401 10 025 3 **date:** AUGUST 1977 **level:** II

skill title: RESCREENING PRINTED HALFTONES

developed & written by: GLEN PETTIT

visuals by: LAURA EIBACH

WORD GUIDE

SCREEN RULE DETERMINER - USED TO FIND THE EXACT SCREEN RULING OF A HALFTONE (SEE PICTURE IN MOD).

PROTRACTOR - A SMALL TOOL USED TO FIND ANGLES (SEE PICTURE IN MOD).

MOIRE - (PRONOUNCED "MAW-RAY") A DOT PATTERN OF THE SCREEN ON A SCREENED PRINT, LIKE A LARGE "CHECKER-BOARD' ON THE PRINT.

PERFORMANCE OBJECTIVE

YOU ARE GOING TO LEARN:

HOW TO RESCREEN A HALFTONE PRINT.

IN ORDER TO DO THIS YOU WILL NEED:

PROCESS CAMERA AND DARKROOM

PMT MATERIALS AND PROCESSOR

HALFTONE SCREEN

SCREEN RULE DETERMINER

PROTRACTOR

WE WILL KNOW YOU CAN DO IT WHEN:

YOU CAN SELECT THE BEST METHOD FOR RESCREENING AN ALREADY PRINTED HALFTONE AND RESCREEN THE HALFTONE SO IT CAN BE PRINTED WITHOUT A MOIRE.

A TAPE OF THIS MODULE IS AVAILABLE.

WORD GUIDE

INDISTINCT - UNCLEAR

INFORMATION

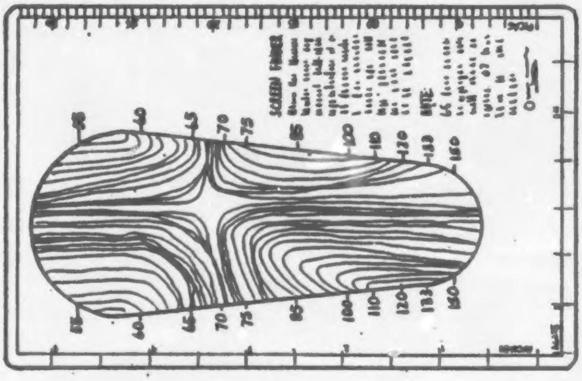
SOMETIMES, A CUSTOMER WILL WANT A PICTURE PRINTED ON A PRINTED HALFTONE WHEN HE/SHE DOES NOT HAVE THE ORIGINAL PHOTOGRAPH. IF THIS HALFTONE IS GOOD QUALITY BLACK OR WHITE, AND THEY WANT IT ABOUT THE SAME SIZE, YOU CAN COPY-DOT IT EASILY. IF THE PATTERN IN THE HALFTONE IS WEAK, INDISTINCT, TOO FINE OR THE CUSTOMER WANTS TO CHANGE SIZE, THE PRINTED HALFTONE MUST BE RESCREENED.

THERE ARE FOUR METHODS TO RESCREEN A PRINTED HALFTONE:

1. CHANGE THE SCREEN RULING BY 50 LINES AND ANGLE 30°.
2. DIFFUSE THE LIGHT DURING EXPOSURE.
3. ENLARGE, AIRBRUSH AND THEN MAKE A HALFTONE.
4. REDUCE THE ORIGINAL TO LESS THAN 35%.

FOR THIS MOD, YOU WILL DO THE FIRST TWO METHODS BECAUSE THE AIRBRUSH IS VERY COSTLY, AND REDUCING TO 35% IS RARE.

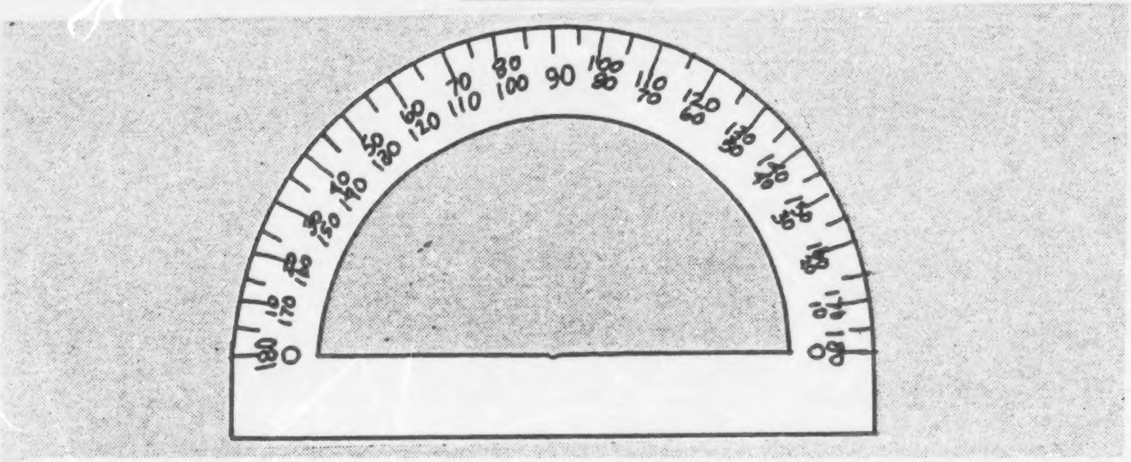
YOU WILL BE USING A SCREEN RULE DETERMINER TO FIND THE SCREEN RULING OF YOUR ORIGINAL PRINTED HALFTONE (IT IS ALSO USED TO FINE-TINT SCREEN RULINGS AND SCREEN FABRIC MESH COUNT). TO USE THE DETERMINER, LAY IT ON THE HALFTONE AND TURN IT UNTIL YOU CAN SEE A "STAR" IN THE CENTER. LINE-UP THE CENTER POINT OF THE STAR TO THE NUMBER NEAR IT AND YOU HAVE THE SCREEN RULING OF THE ORIGINAL HALFTONE.



TO USE A PROTRACTOR WITH A HALFTONE, LAY IT ON THE PRINTED HALFTONE SO THE BASE IS HORIZONTAL AND LINED UP ON THE ROLL OF DOTS. YOU WILL NOTICE THE SCREEN ANGLE WILL BE 45° TO THE RIGHT AND LEFT (ALL SCREENS ARE 45°). TO RESCREEN, WE MUST CHANGE THE ANGLE 30° TO PREVENT THE MOIRE, SO THE NEW HALFTONE MUST BE SHOT 15° OR 75° ON THE CAMERA.

(SEE ILLUSTRATION ON PAGE 4.)

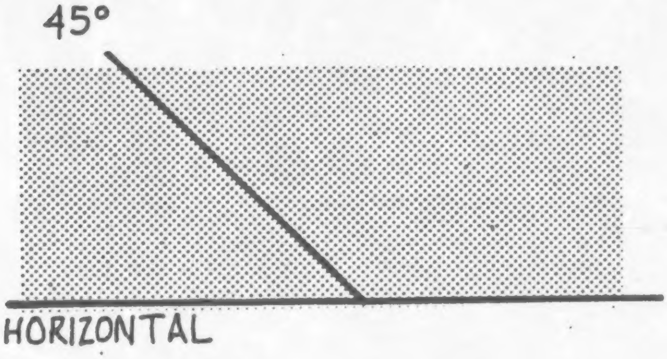
INFORMATION



WHEN WE DIFFUSE THE LIGHT BY MOVING CLEAN GLASS OR PLASTIC BETWEEN THE LENS AND COPY DURING EXPOSURE, WE CAUSE THE COPY TO BECOME SLIGHTLY OUT-OF-FOCUS AND SOFTEN THE HIGH-CONTRAST DOTS FROM THE ORIGINAL HALFTONE.

TO SAVE TIME AND MONEY YOU WILL MAKE PMT HALFTONE PRINTS FOR THIS MOD. BUT, IN INDUSTRY, THEY WOULD GO TO A HALFTONE NEGATIVE.

TO MAKE A RESCREENED HALFTONE PRINT USING THE DIFFUSED-LIGHT METHOD, YOU NEED A PIECE OF CLEAN GLASS. THE MAIN EXPOSURE TIME IS A LITTLE LONGER; OTHERWISE THE PROCEDURE IS THE SAME AS NORMAL. DURING THE ENTIRE MAIN EXPOSURE, HAVE SOMEONE ROTATE THE GLASS CLOSE TO THE LENS AT ABOUT 45°, TURNING THE GLASS ABOUT EQUALLY FROM ALL FOUR SIDES.



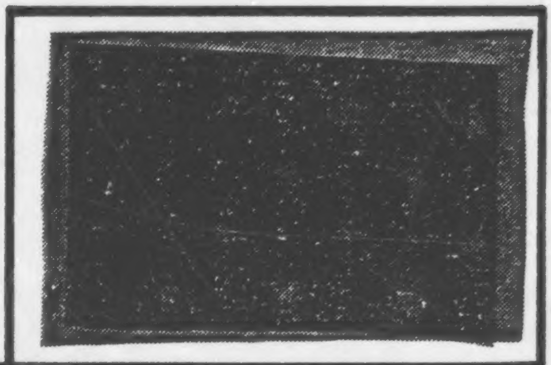
IT WILL TAKE SEVERAL MINUTES OF PRACTICE TO LEARN WHERE TO STAND TO HOLD THE GLASS. BE SURE TO WEAR GLOVES. YOU MUST NOT TOUCH OR MOVE THE LENS OR CAMERA DURING EXPOSURE. SET THE LENS FOR 2% OVER SIZE AND THE COPYBOARD FOR 2% UNDERSIZE, THIS WILL PUT THE ORIGINAL OUT OF FOCUS AND HELP DESTROY THE DOTS.

JOB STEPS

1. COMPLETE MOD 1401 10 024 1-3 "EXPERIMENTING WITH HALFTONE DOT RANGE".

2. TAKE EQUIPMENT & MATERIALS TO YOUR WORK AREA.

3. FIRST LETS EXPERIMENT WITH MOIRES. GET TWO SCREEN TINTS AND LAY THEM ON TOP OF EACH OTHER (BE SURE THEY ARE CLEAN; DUST WILL SCRATCH THEM).



4. ROTATE ONE SLOWLY. THE PATTERN YOU SEE IS A MOIRE. RETURN THE SCREENS AND ASK YOUR INSTRUCTOR TO SHOW YOU SOME OTHER KINDS OF MOIRE PATTERNS.

5. GET THE SCREEN RULE DETERMINER AND PRACTICE USING IT ON PRINTED HALFTONES FROM SEVERAL DIFFERENT KINDS OF SOURCES, LIKE: NEWSPAPERS BOOKS AND MAGAZINES. IF YOU HAVE TROUBLE, ASK FOR HELP (IT'S HARD TO SEE THE STAR AT FIRST).

6. LAY THE PROTRACTOR ON A PRINTED HALFTONE AND SEE IF THE SCREEN ANGLE IS 45° (BLACK AND WHITE ONLY).

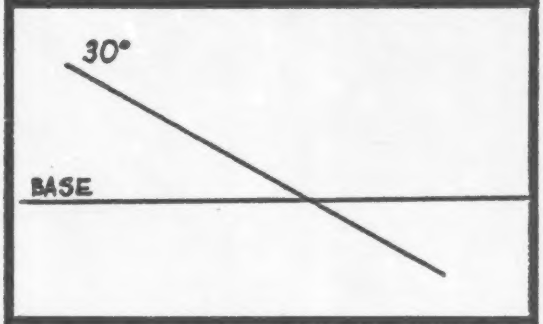
NOTE: ON A 4-COLOR PRINTED PICTURE, EACH COLOR SCREEN IS ANGLED (BLACK-45°, MAGENTA-75°, YELLOW-90° AND CYAN-105°) TO PREVENT A MOIRE, BUT IT IS VERY DIFFICULT TO SEE THE ANGLES.

JOB STEPS

7. NOW YOU ARE READY TO RESCREEN A HALFTONE PRINT. SELECT A GOOD QUALITY PRINTED HALFTONE (FULL TONAL RANGE WITH GOOD BLACKS) AND FIND ITS SCREEN RULING. ALSO FIND THE SCREEN RULING OF THE HALFTONE SCREEN YOU WILL BE USING (PROBABLY A 100 LINE SCREEN, BUT IT COULD BE 80, 110, 120 OR 133 LINE).

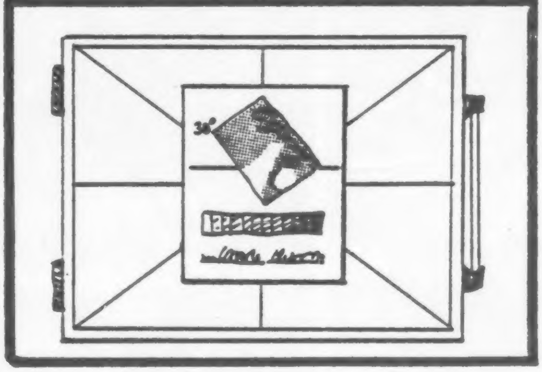
8. USING THE PROPORTION WHEEL, FIND THE REPRODUCTION SIZE THAT WILL GIVE YOU A 50 LINE COARSER OR FINER RULING ON YOUR NEW RESCREENED HALFTONE.

9. USING THE PROTRACTOR, DRAW A HORIZONTAL LINE AND ANOTHER LINE AT 30° FROM THIS ON A PIECE OF PAPER.



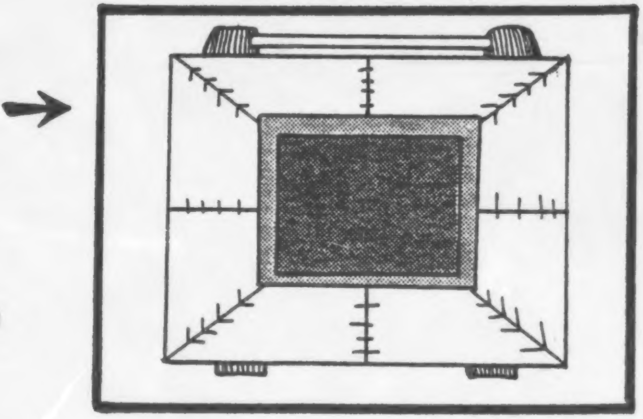
10. USING THE PROCESS CAMERA, LOCATE THE 45° SCREEN RULING ON YOUR ORIGINAL AND SMALL LINE-UP MARKS ON THE SIDE OF THE HALFTONE PRINT.

11. LINE UP THE ORIGINAL HALFTONE PRINT SO IT IS ANGLED 30° ON THE PAPER AND THEN PLACE THESE ON THE COPYBOARD. BE SURE TO INCLUDE YOUR GRAY SCALE AND IDENTIFICATION (NAME, DATE, MOD NUMBER).



JOB STEPS

12. LAY THE PMT SCREEN OVER A PIECE OF PMT NEGATIVE MATERIAL EXACTLY STRAIGHT TO THE VACUUM BOARD MARKS, AND EXPOSE AS YOU WOULD FOR A NORMAL PMT HALFTONE. THEN, PROCESS.



NOTE: YOUR FINAL RESCREENED HALFTONE MAY LOOK A LITTLE GRAY BUT THERE SHOULD BE NO NOTICIBLE MOIRE. YOU SHOULD BE ABLE TO REPRODUCE GOOD HIGHLIGHTS AND SHADOWS.

13. EXPOSE AND PROCESS A DIFFUSED METHOD RESCREENED PMT HALFTONE PRINT.

14. TAKE THE FINAL RESCREENED PRINTS TO YOUR INSTRUCTOR FOR CRITIQUE AND EVALUATION. BE PREPARED TO ANSWER QUESTIONS. RETURN ALL MATERIALS.

graphics

unit: CAMERA (PHOTOMECHANICAL REPRODUCTION)

capital area career center

module: 1401 10 026 3 (above it: 1401 10 026)

date: 8/77 level: I

skill title: USING KODALITH AUTOSCREEN ORTHO FILM

developed & written by: GLEN PETTIT

visuals by: MIKE SMITH

WORD GUIDE

AUTOSCREEN - THE FILM ALREADY HAS A HALFTONE SCREEN RULING PATTERN IN THE EMULSION COATING.

PERFORMANCE OBJECTIVE

YOU ARE GOING TO LEARN:

HOW TO USE KODALITH AUTOSCREEN ORTHO FILM TO MAKE A HALFTONE NEGATIVE FROM A CONTINUOUS-TONE PHOTOGRAPH.

IN ORDER TO DO THIS YOU WILL NEED:

KODALITH AUTOSCREEN ORTHO FILM
ORTHO DEVELOPER
STOP AND FIXER
PROCESS CAMERA AND DARKROOM
CONTINUOUS-TONE PHOTOGRAPH
12-STEP GRAY SCALE

WE WILL KNOW YOU CAN DO IT WHEN:

YOU CAN PRODUCE HALFTONE NEGATIVES TO TRADE STANDARDS USING AUTOSCREEN FILM WHILE AVERAGING LESS THAN 10 MINUTES PRODUCTION TIME ON EACH PHOTOGRAPH.

A TAPE OF THIS MODULE IS AVAILABLE.

INFORMATION

HALFTONE NEGATIVES CAN ALSO BE MADE ON A SPECIAL FILM WITHOUT USING A HALFTONE SCREEN. KODALITH AUTOSCREEN ORTHO FILM HAS A 133-LINE, DOT-SCREEN PATTERN BUILT INTO THE SURFACE OF THE EMULSION. AUTOSCREEN IS MORE SENSITIVE AND REQUIRES LESS LIGHT THAN REGULAR ORTHO FILM BECAUSE THERE IS NO SCREEN TO FILTER LIGHT. IT IS POSSIBLE TO PHOTOGRAPH LINE COPY (TYPE) AND CONTINUOUS TONE COPY (PHOTOGRAPHS) TOGETHER. AUTOSCREEN COULD BE USED IN A "VIEW CAMERA" (PRESS CAMERA) WITH A 4-5 SECOND EXPOSURE TO MAKE IN-CAMERA HALFTONES.

AUTOSCREEN COSTS ABOUT 20% MORE THAN ORTHO, BUT PROCESSING IS THE SAME AS FOR ORTHO. BE SURE TO READ THE FOLLOWING KODALITH AUTOSCREEN DATA SHEET CAREFULLY.

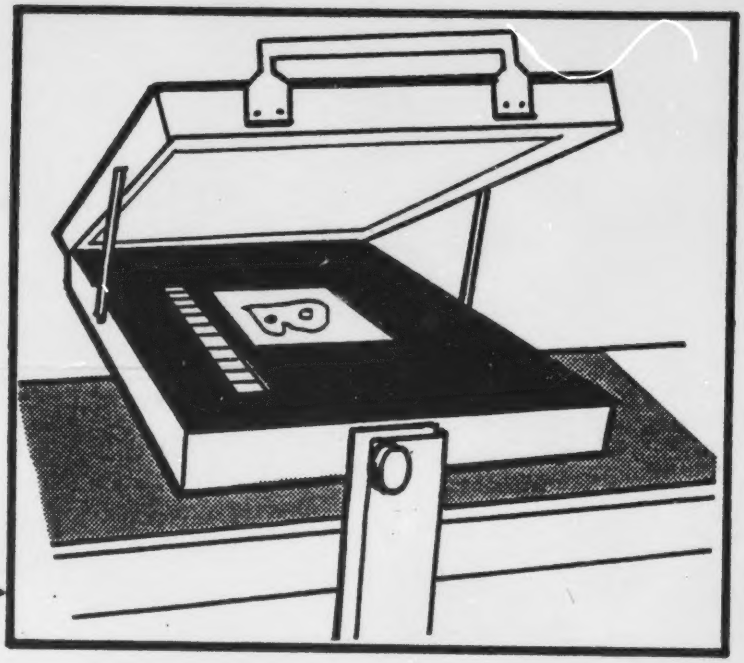
JOB STEPS

1. BEGIN BY COMPLETING THE FIRST HALFTONE MODS BEFORE STARTING THIS (MODS 1401 10 020 - 1401 10 025).

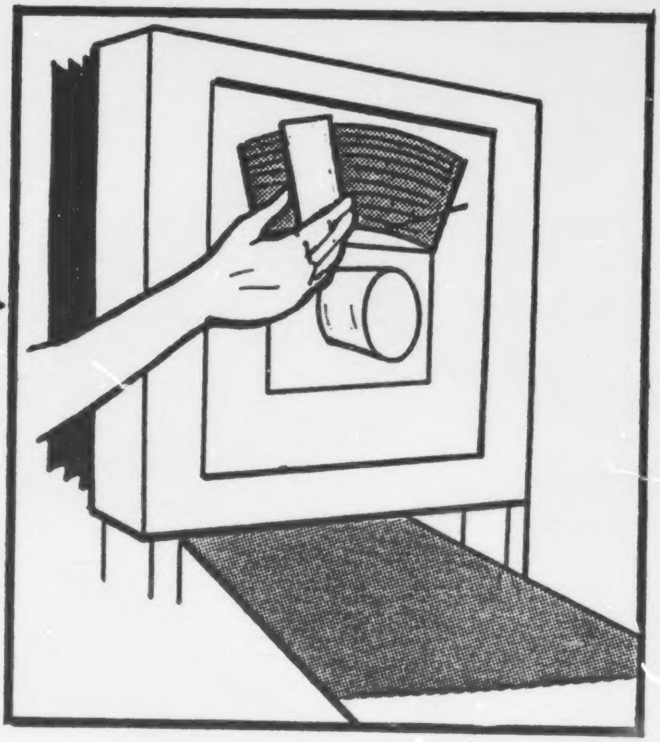
2. TAKE ALL EQUIPMENT & MATERIALS TO YOUR WORK AREA.

3. CHECK THE EXPOSURE CHART TO FIND THE AVERAGE EXPOSURE TIME FOR KODALITH AUTOSCREEN FILM, OR ASK YOUR INSTRUCTOR. IF UNKNOWN, USE THE 'TRIAL-AND-ERROR' METHOD AND DATA SHEET INFORMATION TO DETERMINE CORRECT EXPOSURES.

4. SELECT A GOOD, CONTINUOUS-TONE PHOTOGRAPH WITH A COMPLETE TONAL RANGE AND PLACE THIS ON THE COPYBOARD WITH A 12-STEP GRAY SCALE. INCLUDE A PIECE OF PAPER WITH YOUR NAME, DATE, AND MOD NUMBER TYPED ON IT.



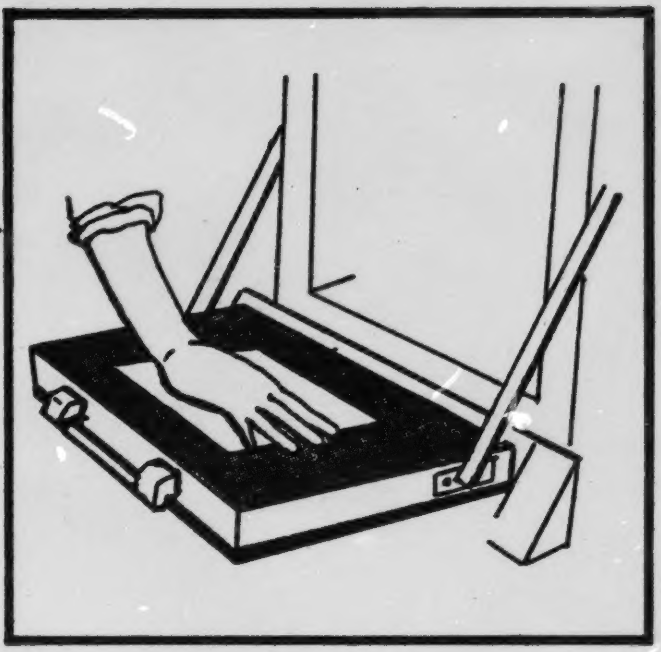
5. SET THE CAMERA FOR 100%, OR SO THE COPY WILL EASILY FIT ON A 10 X 12 CM (4' X 5") PIECE OF AUTOSCREEN FILM.



JOB STEPS

6. UNDER THE SAFELIGHT, GET A PIECE OF KODALITH AUTOSCREEN ORTHO FILM #2563 THAT IS ABOUT 10 X 12 CM IN SIZE AND PLACE THE LIGHTER EMULSION SIDE UP ON THE VACUUM BOARD. THEN, CLOSE THE CAMERA.

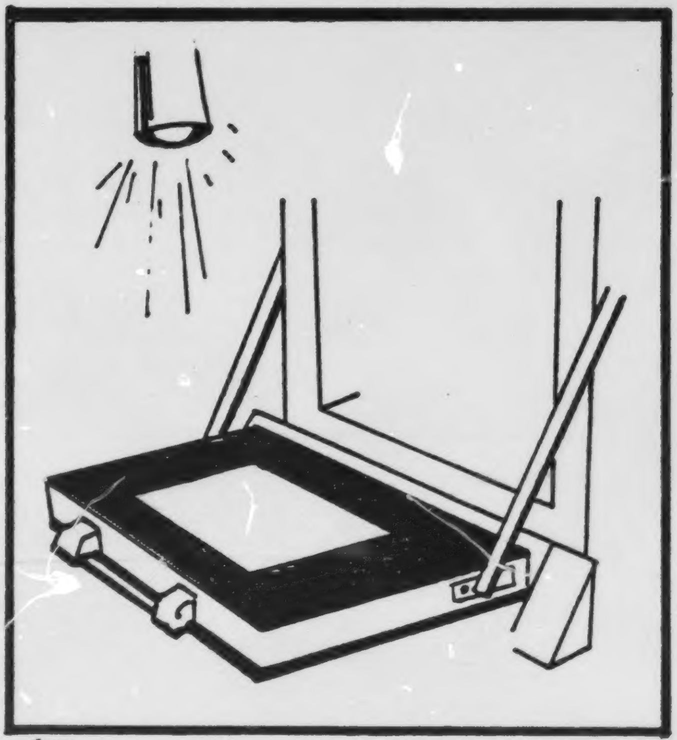
7. SET THE CAMERA FOR THE CORRECT MAIN EXPOSURE AND EXPOSE (DO NOT USE A CONTACT SCREEN).



8. WITH THE VACUUM ON, OPEN THE VACUUM BACK AND EXPOSE TO THE YELLOW FLASH LAMP FOR THE PROPER TIME.

9. PROCESS THE AUTOSCREEN FILM AS YOU WOULD FOR NORMAL ORTHOCHROMATIC HALFTONE NEGATIVES:

DEVELOP	2 1/2 MINUTES (20° C.)
STOP BATH	10 SECONDS
FIX	2 - 4 MINUTES
WASH	10 MINUTES
DRY	



JOB STEPS

10. WHEN DRY, EVALUATE THE QUALITY, COMPARING THE HALFTONE NEGATIVE WITH THE ORIGINAL PHOTOGRAPH. CHECK THESE THINGS:

A. WHAT SIZE IS YOUR HIGHLIGHT DOT?

B. WHAT SIZE IS YOUR SHADOW DOT?

C. WHAT IS THE SCREEN RULING?

D. IS THIS NEGATIVE ACCEPTIBLE?

E. IS THE LINE COPY CLEAR AND BACKGROUND CLEAN?

NOTE: IF NECESSARY, CORRECT THE MAIN OR FLASH EXPOSURE TO PRODUCE A BETTER HALFTONE NEGATIVE.

11. WHEN YOU HAVE AN ACCEPTABLE AUTOSCREEN HALFTONE NEGATIVE, SHOW ALL YOUR WORK TO YOUR INSTRUCTOR FOR CREDIT.

graphics

unit: CAMERA (PHOTOMECHANICAL REPRODUCTION)

capital area career center

module: 1401 10 027
1401 10 027 3 **date:** 8/77 **level:** II

skill title: SPECIAL HALFTONE SCREENS AND EFFECTS

developed & written by: GLEN PETTIT

visuals by: MIKE SMITH

WORD GUIDE

CALIBRATE - FIGURE OUT AND SET (ON A MACHINE).

PERFORMANCE OBJECTIVE

YOU ARE GOING TO LEARN:

HOW TO USE SPECIAL EFFECT HALFTONE SCREENS AND HOW TO CALIBRATE EXPOSURE TIMES.

IN ORDER TO DO THIS YOU WILL NEED:

PROCESS CAMERA

DARKROOM & CHEMICALS

TWO SPECIAL EFFECT HALFTONE SCREENS

A PHOTOGRAPH

ORTHOCROMATIC FILM

WE WILL KNOW YOU CAN DO IT WHEN:

YOU CAN SELECT AN APPROPRIATE, SPECIAL EFFECT HALFTONE SCREEN, DETERMINE THE MAIN AND FLASH EXPOSURE TIMES, AND PRODUCE A PLEASING, SPECIAL EFFECT HALFTONE FROM EACH OF TWO DIFFERENT SCREENS.

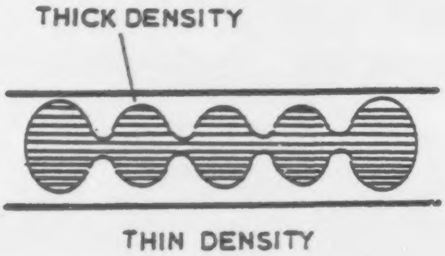
A TAPE OF THIS MODULE IS AVAILABLE.

WORD GUIDE

TRANSFER - SWITCH; CHANGE

INFORMATION

THERE ARE MANY KINDS OF CONTACT SCREENS AVAILABLE. YOU LEARNED IN MOD 1401 10 020 "BASIC HALFTONE PHOTOGRAPHY" THAT A HALFTONE SCREEN IS COMPOSED OF VIGNETTED DOTS.



THE MORE LIGHT REFLECTED FROM THE ORIGINAL PHOTOGRAPH TO A SPECIFIC AREA, THE LARGER THE HALFTONE DOT.

THE SCREEN "RULING" IS THE NUMBER OF DOTS-PER-INCH. SCREEN RULINGS CAN BE FROM 32 TO 300 DOTS-PER-INCH OR 10,000 DOTS-PER-SQUARE-INCH.

DOT SIZE DEPENDS ON WHAT CAN BE PRINTED. MOST FILMS CAN HOLD A 2 TO 98% DOT BUT MOST LARGE PRESSES CAN ONLY PRINT A DOT-SIZE RANGE OF 4 TO 96%. DUPLICATORS AND SMALL PRESSES USUALLY PRINT A 10 TO 90% BECAUSE OF PLATES, BLANKETS, PAPER, AND PRESSURES. REMEMBER, IN PRINTING THE NEGATIVE DOT MUST TRANSFER TO A PLATE, BE INKED, TRANSFER TO A BLANKET, AND THEN THE PAPER. ALL THIS WILL CAUSE A TOO-SMALL DOT TO DISAPPEAR. SEE THE KODAK CONTACT SCREENS REFERENCE CHART.

SCREENS CAN ALSO BE PURCHASED WITH SPECIAL EFFECT SCREEN RULINGS, (SEE THE CAPROCK SCREEN SHEET). WE HAVE SEVERAL SPECIAL EFFECT SCREEN RULINGS FOR YOU TO USE.

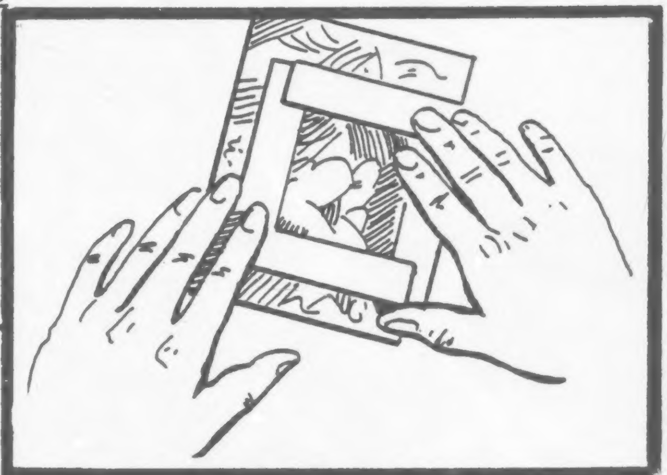
THE AVERAGE COST FOR AN 8" X 10" SPECIAL EFFECT HALFTONE SCREEN IS $38.

JOB STEPS

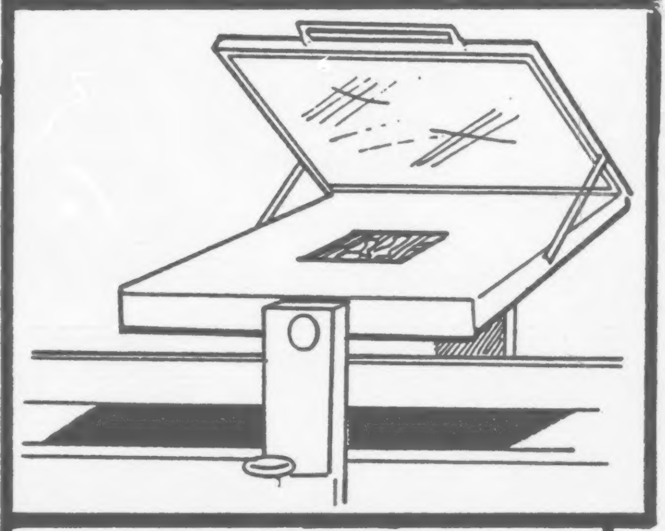
1. FIRST, COMPLETE MOD 1401 10 024, "EXPERIMENTING WITH HALFTONE DOT RANGE".

2. TAKE ALL EQUIPMENT & MATERIALS TO YOUR WORK AREA.

3. SELECT A PHOTOGRAPH WITH A GOOD TONAL RANGE FROM WHITE TO BLACK. CONCENTRATE AND CROP SO YOU ARE WORKING WITH ONE MAIN SUBJECT IN YOUR PICTURE.

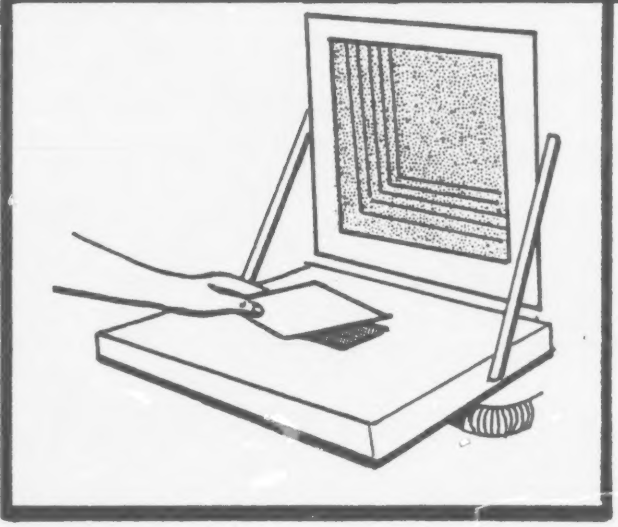


4. PLACE YOUR PHOTOGRAPH ON THE PROCESS CAMERA. SET THE CAMERA SO YOUR SUBJECT WILL BE ABOUT 8 CM IN DIAMETER.



5. ASK FOR THE SPECIAL EFFECT HALFTONE SCREENS AND SELECT THE TWO YOU WILL USE FOR THIS MOD.

6. EXPERIMENT TO FIND THE BEST EXPOSURE TIMES: USING THE COPY ON THE CAMERA AND YOUR "EDUCATED" ESTIMATE OF EXPOSURE TIMES, RUN A MAIN EXPOSURE SERIES (HORIZONTAL) AND A FLASH EXPOSURE SERIES (VERTICAL) ON A PIECE OF ORTHO FILM.



7. PLACE THE FILM ON THE VACUUM BOARD AND COVER WITH THE SPECIAL EFFECT SCREEN.

8. USE A LARGE CHIPBOARD TO STEP OFF THE MAIN EXPOSURES, THEN THE FLASH EXPOSURES. BE SURE THE VACUUM STAYS ON AND THE SCREEN DOES NOT MOVE.

9. WHEN THE FILM IS EXPOSED, RETURN THE SCREEN TO ITS FOLDER AND PROCESS THE HALFTONE NEGATIVE. EVALUATE YOUR EXPOSURE TEST.

NOTE: IT MAY HELP TO MAKE A DYLUX PROOF OR A CONTACT PRINT. YOU ARE LOOKING FOR A PLEASING SPECIAL EFFECT WITH SMALL LINES OR DOTS IN THE HIGHLIGHTS AND LARGE LINES OR DOTS IN THE SHADOW AREAS.

JOB STEPS

10. SELECT THE BEST EXPOSURE TIMES (OR MAKE A SECOND EXPOSURE TEST AT DIFFERENT TIMES) AND MAKE A SPECIAL EFFECT HALFTONE NEGATIVE.

11. USING THE SECOND SPECIAL EFFECT HALFTONE SCREEN, REPEAT STEPS 6-10.

12. MAKE A DYLUX PROOF OR CONTACT PRINT FOR EACH OF THESE HALFTONES.

13. SHOW THEM TO YOUR INSTRUCTOR FOR EVALUATION AND CREDIT.

graphics

unit: CAMERA (PHOTOMECHANICAL REPRODUCTION)

capital area career center

module: 1401 10 028
1401 10 028 3
date: 8/77
level: II

skill title: HOW TO MAKE A DUOTONE

developed & written by: GLEN PETTIT

visuals by: MIKE SMITH

WORD GUIDE

DUOTONE - DUO MEANS 2, TONE WOULD BE COLOR.

PERFORMANCE OBJECTIVE

YOU ARE GOING TO LEARN:

HOW TO MAKE A DUOTONE.

IN ORDER TO DO THIS YOU WILL NEED:

PROCESS CAMERA AND DARKROOM

ORTHO FILM AND CHEMICALS

A PHOTOGRAPH

COLOR-KEY PROOFING MATERIALS

HALFTONE SCREEN

WE WILL KNOW YOU CAN DO IT WHEN:

1. YOU CAN PRODUCE AND PROOF A PAIR OF HALFTONE NEGATIVES WITH THE PROPER CONTRAST RANGE TO GIVE A PLEASING DUOTONE.
2. THE FINAL PROOFS ARE IN REGISTER WITH STRONG LIGHT-COLOR HIGHLIGHTS.

A TAPE OF THIS MODULE IS AVAILABLE.

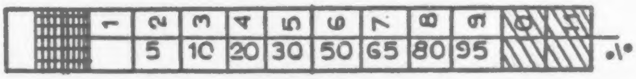
WORD GUIDE

CRITICAL - ESSENTIAL, MOST IMPORTANT.

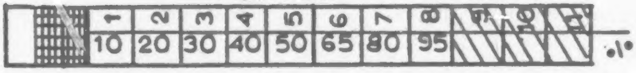
INFORMATION

DUOTONES ARE MADE FROM BLACK AND WHITE PHOTOGRAPHS. THEY ARE TWO HALFTONES, ONE PRINTED IN A DARK COLOR AND THE OTHER IN A LIGHT COLOR. THE HALFTONE NEGATIVE FOR THE DARK COLOR (USUALLY BLACK) HAS NORMAL CONTRAST BUT WEAK HIGHLIGHTS. THE LIGHT COLOR NEGATIVE HAS MORE CONTRAST AND STRONGER-THAN-NORMAL HIGHLIGHTS.

DARK PRINTER



LIGHT PRINTER



DUOTONES GIVE HALFTONES A RICH, GOOD QUALITY, EXPENSIVE LOOK WHEN PRINTED, ALMOST LIKE A COLOR PHOTOGRAPH. SOMETIMES, JUST PART OF A PHOTOGRAPH GETS THE DUOTONE EFFECT (OUTLINE IS CUT OUT IN STRIPPING). DUOTONES ARE EASY TO MAKE AND REGISTER IS NOT CRITICAL ON THE OFFSET.

THE TWO HALFTONES MUST BE ANGLES 30° FROM EACH OTHER TO PREVENT A MOIRE. BE SURE THE COLOR CHOICE MATCHES THE SUBJECT. FOR EXAMPLE, A FLORIST PICTURE IN BLUE OR A BOAT IN GREEN.

FOR THIS MOD, YOU WILL SELECT A PHOTOGRAPH, MAKE THE TWO HALFTONES, AND MAKE A COLOR KEY PROOF OF THE TWO IN REGISTER.

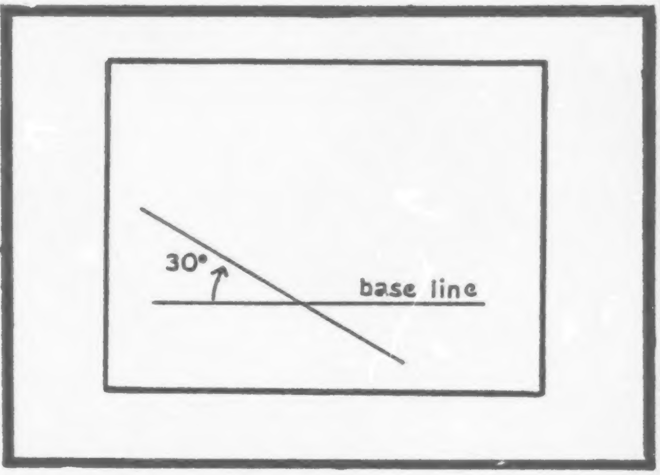
JOB STEPS

1. COMPLETE THESE MODS: 1401 10 024, "EXPERIMENTING WITH HALFTONE DOT RANGE. . ." AND MOD 1401 10 024 "RESCREENING PRINTED HALFTONES".

2. TAKE ALL EQUIPMENT AND MATERIALS TO YOUR WORK AREA.

3. SELECT A GOOD PHOTOGRAPH TO USE FOR YOUR DUOTONE. YOU MAY WANT TO LOOK AT SOME EXAMPLES OF DUOTONES OTHERS HAVE MADE OR LOOK UP DUOTONES IN ONE OF THE REFERENCE BOOKS.

4. USE A PROTRACTOR LIKE YOU DID IN MOD 1401 10 024 "RESCREENING PRINTED HALFTONES" TO DRAW A BASE LINE AND A 30° ANGLE LINE. DRAW CENTER MARKS ON YOUR PHOTOGRAPH SO IT CAN BE ANGLED ON THESE LINES BETWEEN EXPOSURES.



5. USING A HALFTONE COMPUTER, DETERMINE WHAT YOUR MAIN AND FLASH EXPOSURE TIMES WOULD BE FOR A NORMAL HALFTONE NEGATIVE OF THIS PHOTOGRAPH.

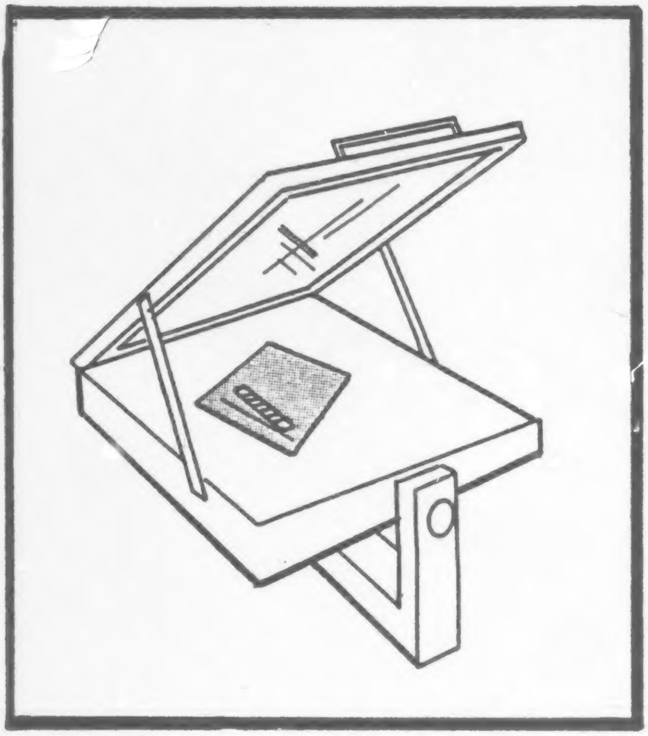
NOTE: REFER TO THE EXAMPLES OF THE 2 GRAY SCALES ON THE INFORMATION PAGE: FOR THE DARK PRINTER, WE WANT WEAK HIGHLIGHTS SO YOU MUST INCREASE THE MAIN; FOR THE LIGHT PRINTER, WE NEED A SHORTER-THAN-NORMAL MAIN EXPOSURE.

6. DETERMINE THE MAIN AND FLASH FOR BOTH THE DARK AND LIGHT HALFTONE NEGATIVES.

7. PUT THE PHOTOGRAPH AND GRAY SCALE ON THE CAMERA, LINE UP ON THE BASE LINE, AND EXPOSE. DO NOT PROCESS.

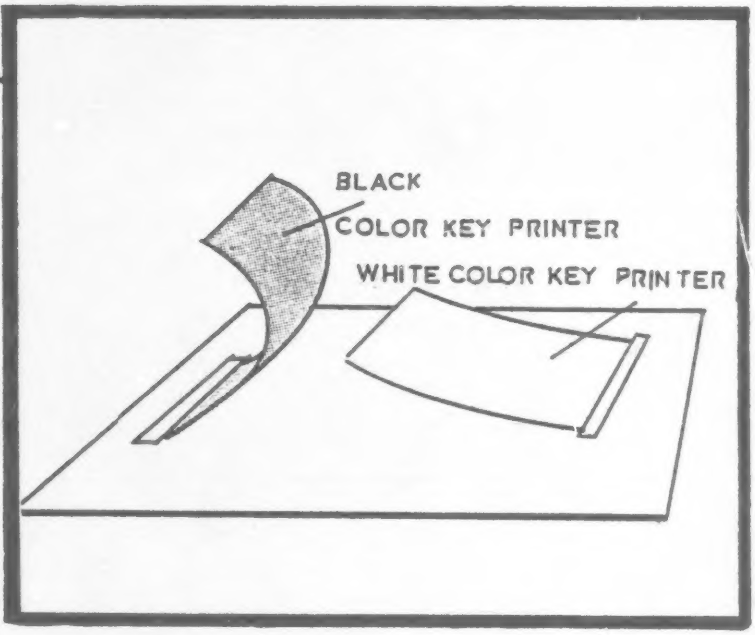
JOB STEPS

8. DO NOT CHANGE THE CAMERA SETTINGS. ROTATE THE PHOTOGRAPH 30° AND EXPOSE THE LIGHT HALFTONE PRINTER.



9. NOW, PROCESS BOTH PIECES OF FILM.

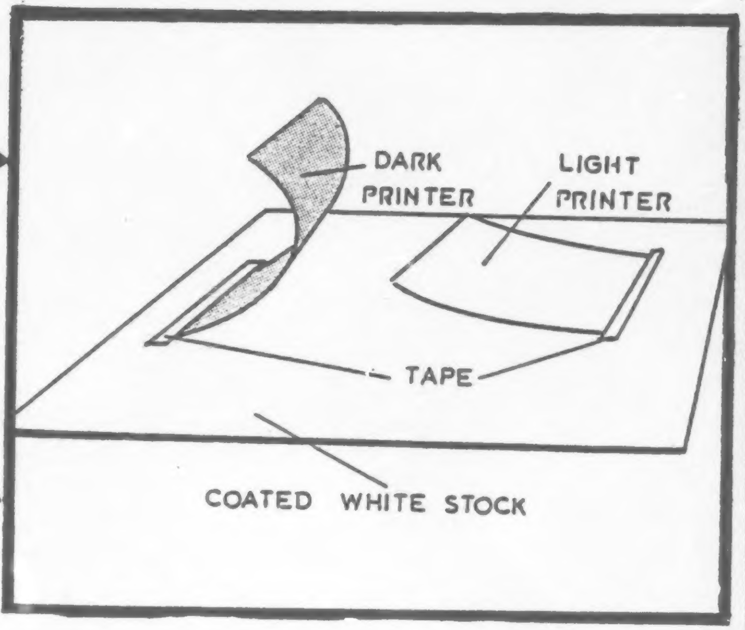
10. WHEN THE NEGATIVES ARE DRY, MARK YOUR DARK AND LIGHT HALFTONE PRINTER (NEGATIVE) AND MAKE A SET OF COLOR-KEY PROOFS. USE 10 X 12 CM (4" X 5") PIECES, ONE BLACK AND ONE: MAGENTA, CYAN, OR GREEN.



JOB STEPS

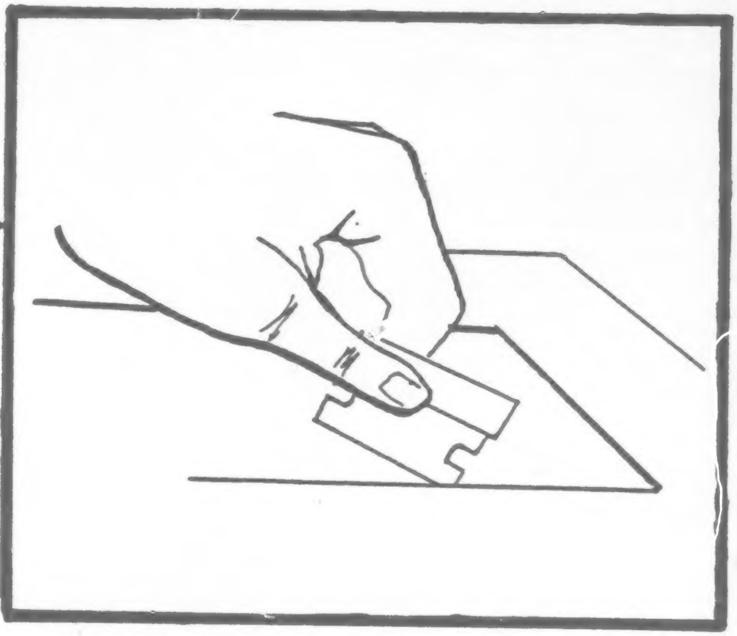
11. HINGE THE PROOFS ON A PIECE OF WHITE COATED PAPER. WRITE DOWN THE DOT SIZE AND STEP NUMBER FOR HIGHLIGHT AND SHADOW DOT.

NOTE: BECUASE EACH PHOTOGRAPH AND SUBJECT HAS ITS INDIVIDUAL VARIABLES, WE HAVE TO GUESS ABOUT WHAT IS PLEASING TO THE EYE. IT IS IMPOSSIBLE TO SAY ALWAYS: OVER-UNDER EXPOSE BY 10% FOR EVERY PICTURE. YOUR INSTRUCTOR MAY ASK YOU QUESTIONS TO SEE HOW WELL YOU UNDERSTAND DUOTONES.



12. NOW, MAKE A SIMPLE FAKE DUOTONE.

A. TAKE A SMALL PIECE OF MASKING SHEET AND CUT AN OPENING IN IT EXACTLY THE SAME SIZE AS YOUR BLACK HALFTONE NEGATIVE PRINTER.



graphics

unit: CAMERA (PHOTOMECHANICAL REPRODUCTION)

capital area career center

module: 1401 10 029
1401 10 029 3 **date:** 8/77 **level:** II

skill title: HOW TO MAKE A POSTERIZATION

developed & written by: GLEN PETTIT

visuals by: MIKE SMITH

WORD GUIDE

POSTERIZATION - A HIGH CONTRAST HALFTONE.

PERFORMANCE OBJECTIVE

YOU ARE GOING TO LEARN:

HOW TO MAKE A SPECIAL EFFECT POSTERIZATION AND ON-CAMERA PHOTO-ART.

IN ORDER TO DO THIS YOU WILL NEED:

PROCESS CAMERA
DARKROOM AND CHEMICALS
ORTHO FILM
CONTACT PAPER
COLOR-KEY
A PHOTOGRAPH
SPECIAL EFFECT SCREEN TINTS.

WE WILL KNOW YOU CAN DO IT WHEN:

1. YOU CAN MAKE A TWO COLOR LINE POSTERIZATION, A SCREEN TINT POSTERIZATION AND A ROTATED SCREEN POSTERIZATION.
2. YOUR POSTERIZATIONS WILL HAVE A SOLID SHADOW AREA, AN OPEN HIGHLIGHT, AND REGULAR MIDDLETONES.
3. THE FINAL PROOF FOR EACH METHOD HAS A PLEASING, ON-CAMERA ART APPEARANCE AND IS PRINTABLE.

A TAPE OF THIS MODULE IS AVAILABLE.

INFORMATION

A POSTERIZATION IS A HIGH CONTRAST PHOTOGRAPH. IT IS A PICTURE WITH BLACKS (SOLIDS), PURE WHITES, AND A PATTERN IN THE MIDDLETONES. ONE CAN BE MADE MANY WAYS; THE MOST COMMON ARE:

1. SHOOT A PHOTOGRAPH TWICE AS NORMAL LINE COPY WITHOUT A SCREEN; OVEREXPOSE ONE (BLACK) AND UNDEREXPOSE ONE (COLOR PRINTOR); RUN IN TWO COLORS.
2. SHOOT A PHOTOGRAPH LIKE A HALFTONE USING A SPECIAL EFFECT, SCREEN TINT IN PLACE OF THE HALFTONE SCREEN; SAME MAIN EXPOSURE, NO FLASH, BUT ADD A 'BUMP' (NO SCREEN) EXPOSURE FOR AN ADDITIONAL 20% OF THE MAIN EXPOSURE.
3. ROTATE A SPECIAL EFFECT SCREEN TINT (SAME AS #2), BUT DURING THE MAIN EXPOSURE, STOP 2/3 OF THE WAY AND ROTATE YOUR SCREEN 90°; THEN EXPOSE THE LAST 1/3' SOME BUMP.

FOR THIS MODULE, YOU WILL DO ALL THREE OF THE ABOVE. THE OBJECT IS TO CREATE MODERN, SPECIAL EFFECTS USING THE CAMERA. WHAT YOU CAN DO IN LESS THAN AN HOUR ON THE CAMERA WOULD TAKE A HIGHLY SKILLED ARTIST DAYS TO CREATE. THERE MAY BE SOME EXAMPLES OF POSTERIZATIONS AVAILABLE FOR YOU TO LOOK AT, SO ASK YOUR INSTRUCTOR TO SEE THESE AND TO HELP YOU SELECT A PHOTOGRAPH.

A POSTERIZATION CAN ALSO BE MADE IN AN ENLARGER: MAKE A SHORT EXPOSURE THROUGH A 35 MM NEGATIVE TO HIGH CONTRAST PAPER; THEN ADD A SPECIAL EFFECT TINT IN CONTACT WITH THE PAPER FOR A LONGER EXPOSURE. REMEMBER, DO NOT MOVE THE FILM OR PAPER BETWEEN EXPOSURES.

JOB STEPS

1. FIRST, COMPLETE MOD 1401 10 028, "DUOTONES".

2. TAKE ALL EQUIPMENT AND MATERIALS TO YOUR WORK AREA.

3. WITH YOUR INSTRUCTORS HELP, SELECT A PHOTOGRAPH TO BE USED FOR ALL THREE METHODS. DO ALL YOUR WORK SO IT EASILY FITS ON 10 X 12.5 CM FILM, PAPER, AND COLOR-KEY.

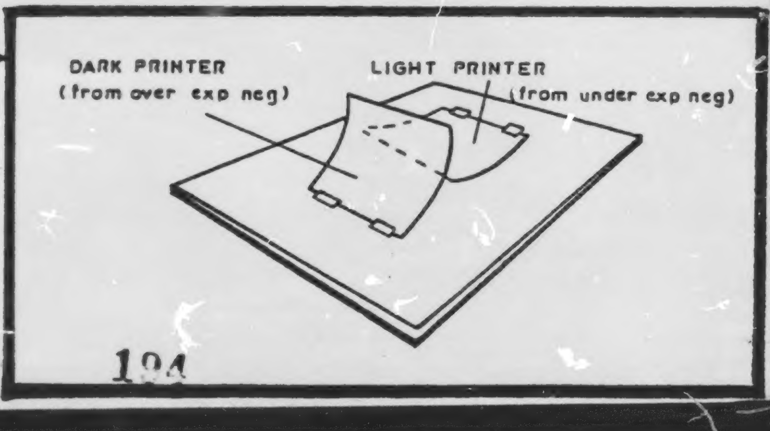
4. PLACE YOUR PHOTOGRAPH ON THE COPYBOARD, WITH A GRAY SCALE AND INCLUDE YOUR NAME. SET THE CAMERA SO THE IMAGE EASILY FITS THE 10 X 12.5 CM ORTHO FILM YOU WILL BE USING.

5. MAKE ONE EXPOSURE AT ABOUT 75% OF THE NORMAL LINE EXPOSURE (NO SCREENS).

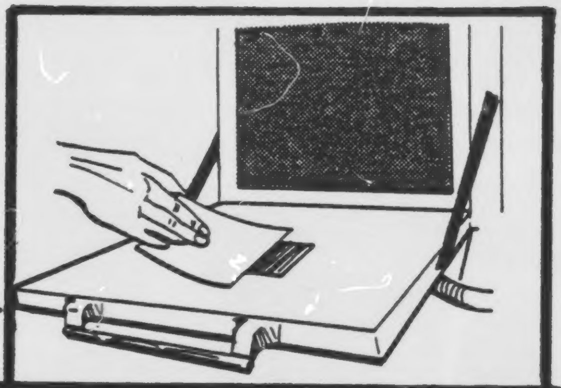
6. MAKE A SECOND NEGATIVE AT ABOUT 125% OF THE NORMAL LINE EXPOSURE.

7. PROCESS BOTH PIECES.

8. WHEN THESE DRY, MAKE A PAIR OF COLOR-KEY PROOFS. USE THE OVEREXPOSED NEGATIVE FOR THE COLOR PRINTER (MAGENTA, CYAN, GREEN OR BROWN).

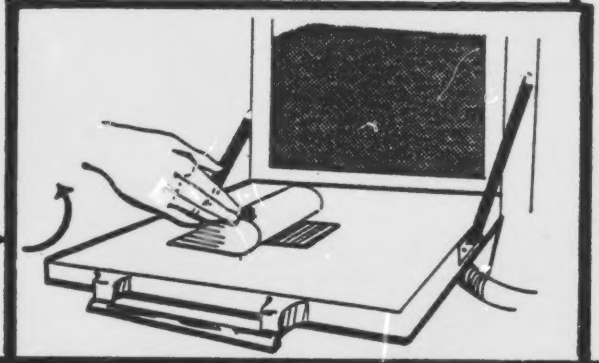


JOB STEPS

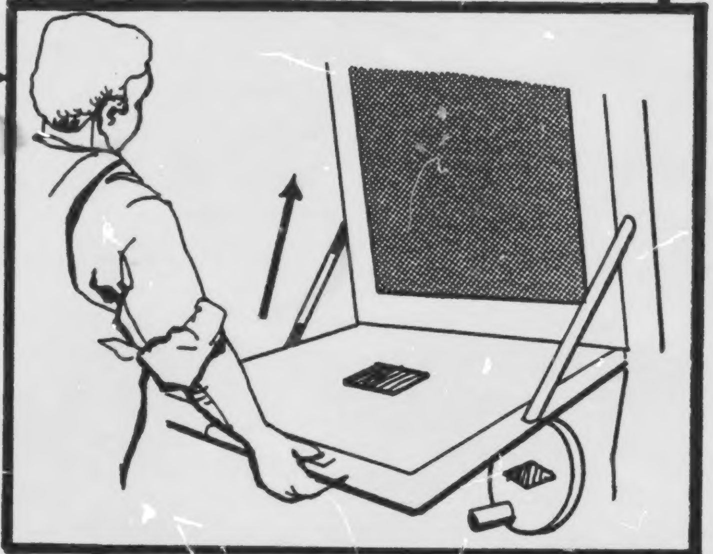


9. SELECT ONE OF THE SPECIAL EFFECT SCREEN TINTS (WITH A SMALL UNIFORM PATTERN). USE THE SAME COPY AND FILM AS IN STEP #3. STEP UP THE CAMERA.

10. PLACE AND CENTER THE 10 X 12.5 CM ORTHO FILM ON THE VACUUM. THEN, PLACE THE SPECIAL EFFECT SCREEN TINT OVER THE FILM. EXPOSE FOR THE SAME TIME AS FOR A RUGULAR HALFTONE, BUT DO NOT TURN OFF THE VACUUM WHEN FINISHED.



11. AFTER EXPOSURE, CAREFULLY REMOVE THE SCREEN TINT WITH THE VACUUM STILL ON BY ROLLING BACK (DO NOT LIFT).

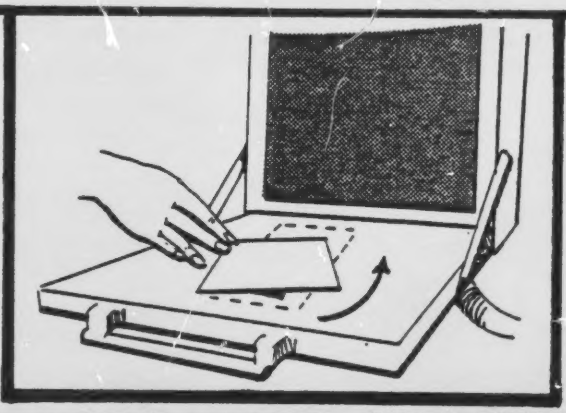


12. CLOSE THE CAMERA AND MAKE A 'BUMP' OR NO SCREEN EXPOSURE FOR 20% OF THE MAIN EXPOSURE TIME.

NOTE: DO NOT USE A YELLOW FLASH EXPOSURE.

13. PROCESS THIS NEGATIVE AND MAKE A CONTACT PRINT WHEN DRY.

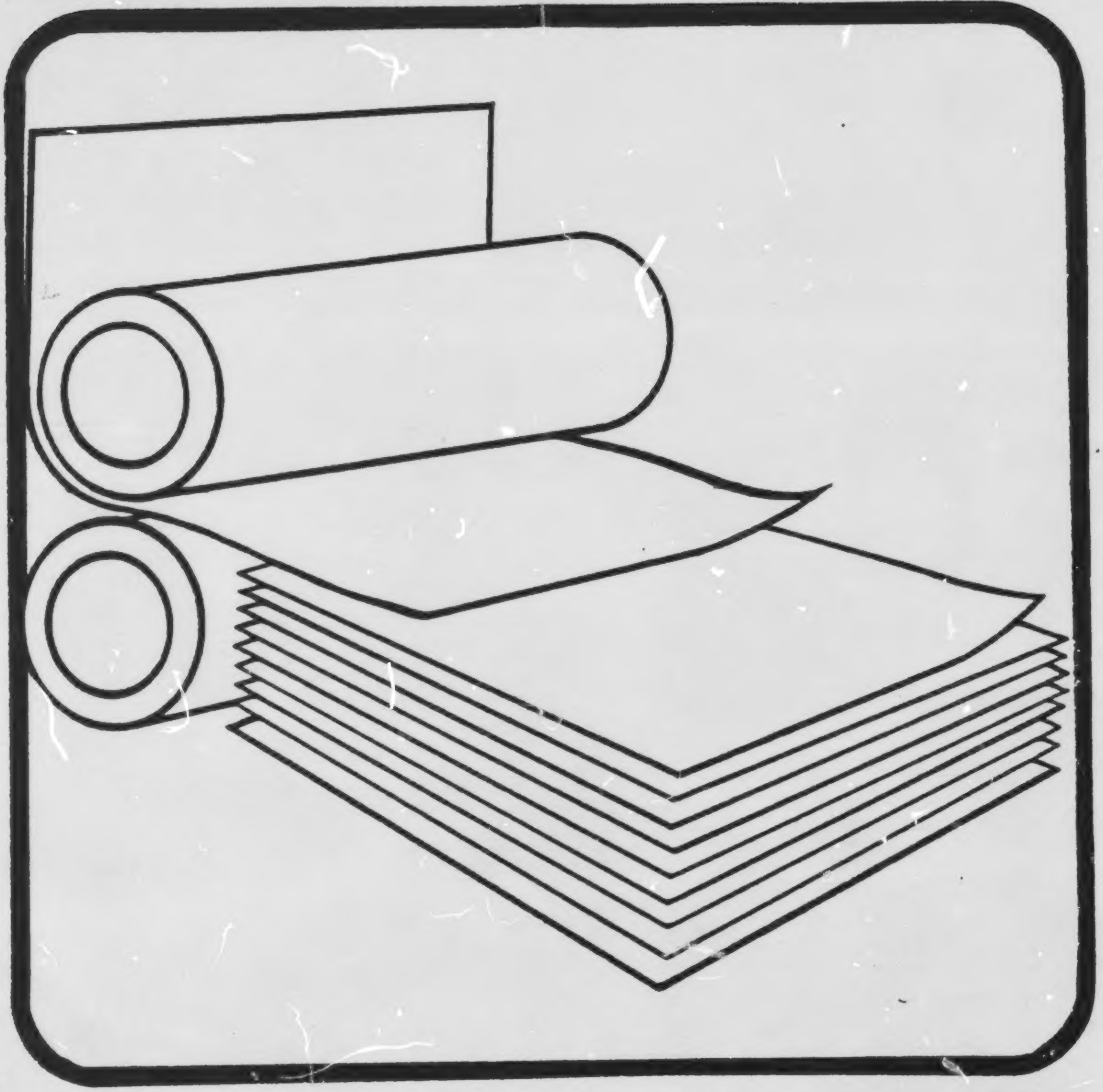
14. SELECT A DIFFERENT SPECIAL EFFECT SCREEN TINT WHAN YOU USED IN STEP #9. SET UP THE CAMERA.



15. MAKE THE SAME EXPOSURES AS YOU DID IN STEPS 10 & 11, BUT AFTER 2/3 OF THE EXPOSURE, ROTATE THE SCREEN 90° (LEAVE THE VACUUM ON SO THE FILM DOES NOT MOVE) AND FINISH EXPOSING. MAKE THE 20% BUMP.

16. PROCESS THIS NEGATIVE AND MAKE A CONTACT PRINT.

17. TAKE THE PROOFS FROM ALL THREE POSTERIZATION METHODS TO YOUR INSTRUCTOR FOR EVALUATION.



graphics

unit: CAMERA (PHOTOMECHANICAL REPRODUCTION)

capital area career center

1401 10 030

module: 1401 10 030 3 **date:** AUGUST 1977 **level:** II

skill title: HOW TO MAKE A DROPOUT AND A PHANTOM HALFTONE

developed & written by: GLEN PETTIT

visuals by:

WORD GUIDE

PHANTOM - VERY LIGHT, HARD TO SEE.

PERFORMANCE OBJECTIVE

YOU ARE GOING TO LEARN:

HOW TO MAKE A DROPOUT HALFTONE AND A PHANTOM HALFTONE.

IN ORDER TO DO THIS YOU WILL NEED:

PROCESS CAMERA
DARKROOM AND CHEMICALS
ORHTO FILM AND RUBYLITH
A PHOTOGRAPH

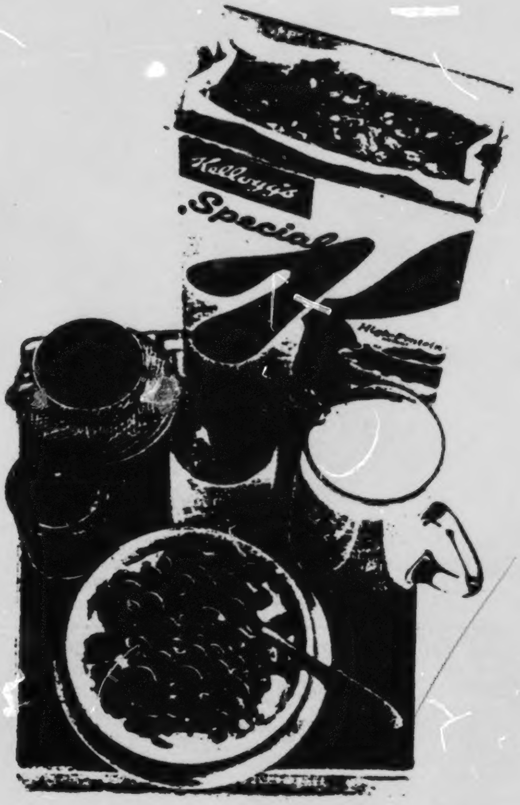
WE WILL KNOW YOU CAN DO IT WHEN:

1. YOU CAN MAKE A DROPOUT HALFTONE WITH A GOOD SUBJECT (OR FOREGROUND) AND NO BACKGROUND.
2. YOU CAN MAKE A SUBDUED, PHANTOM HALFTONE PRINT THAT CAN BE OVERPRINTED WITH ATTENTION CONFLICT.

A TAPE OF THIS MODULE IS AVAILABLE.

INFORMATION

A DROPOUT HALFTONE IS ONE IN WHICH THE BACKGROUND OR PARTS OF THE HALFTONE HAVE BEEN REMOVED. IN A CATALOG, LIKE SEARS OR WARDS, OR IN A GROCERY AD, IT IS VERY IMPORTANT TO GET RID OF DISTRACTING THINGS IN THE PICTURE.



A "PHANTOM" IS A LIGHTENED HALFTONE (OR PART OF A HALFTONE). IF THE ENTIRE HALFTONE IS MADE INTO A PHANTOM, OFTEN IT IS PRINTED OVER WITH TYPE OR LINE COPY. THE BACKGROUND PHANTOM IS MADE SO THE SUBJECT WILL STAND OUT MORE FROM THE BACKGROUND.

YOU WILL BE MAKING BOTH A DROPOUT HALFTONE AND A PHANTONE HALFTONE FOR THIS MOD.

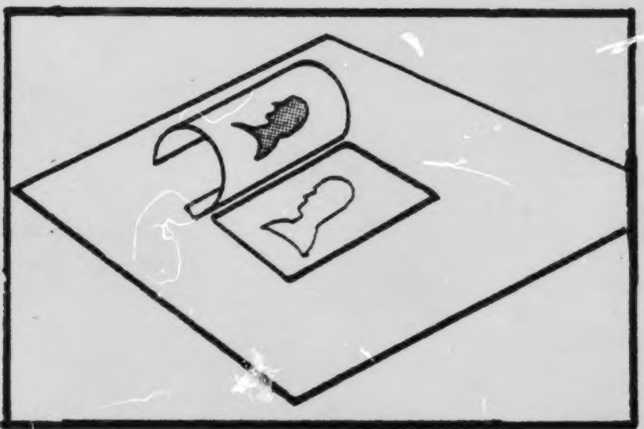
JOB STEPS

1. FIRST COMPLETE MOD 1401 10 029 "PASTERIZATION" BEFORE STARTINT THIS MOD.

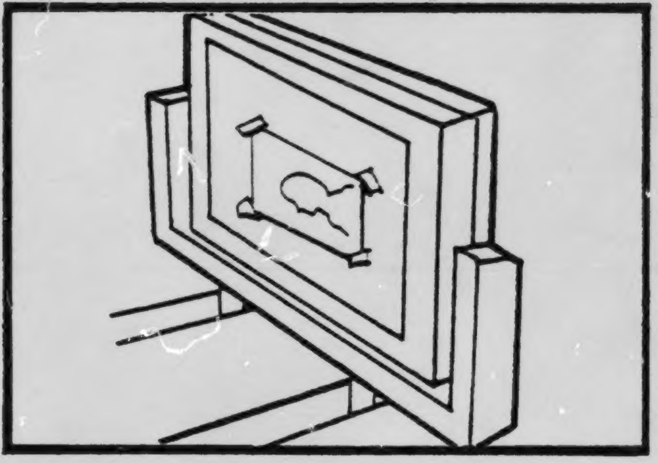
2. TAKE ALL EQUIPMENT AND MATERIALS TO YOUR WORK AREA.

3. SELECT A SMALL PHOTOGRAPH (A PORTRAIT OF A PERSON OR SINGLE OBJECT IS BEST) TO USE AS A DROP-OUT.

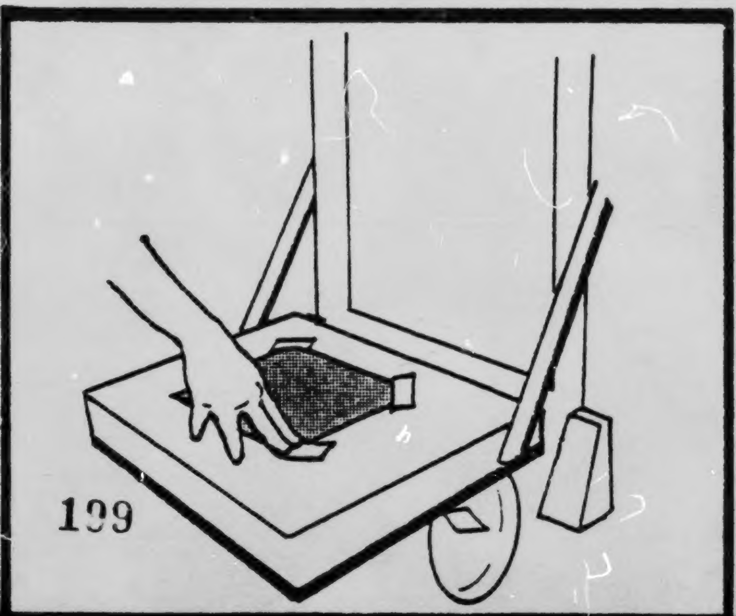
4. ON A STRIPPING TABLE, USING RUBYLITH THAT IS ATTACHED TO THE PHOTOGRAPH ON A HINGE, CUT A MASK FOR THE AREA YOU WANT TO HOLD. THE BACKGROUND MUST BE OPEN.



5. TAPE THIS PHOTOGRAPH WITH THE MASK ON THE COPYBOARD.



6. TAPE A 10 X 12.5 CM PIECE OF ORTHO FILM ON THE VACUUM BOARD SO IT CANNOT MOVE.

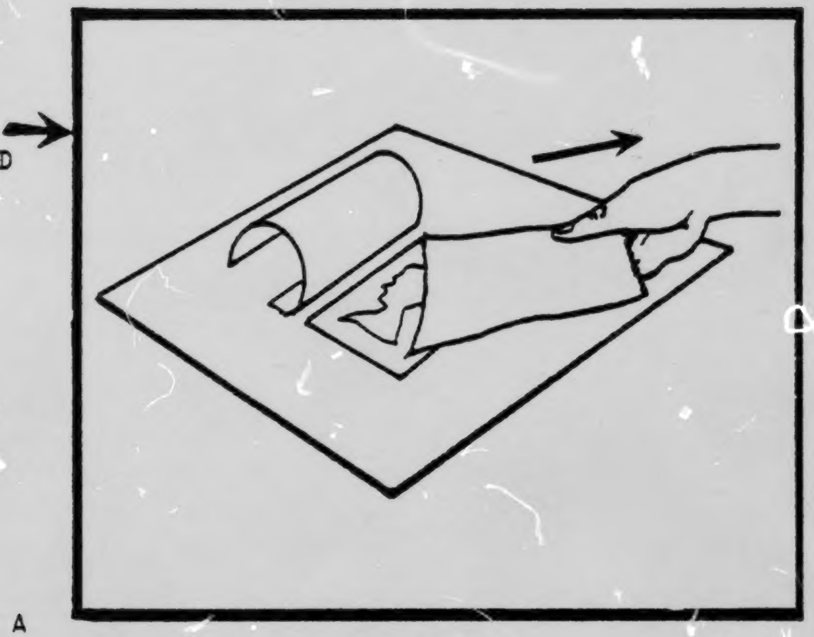


JOB STEPS

7. PUT A PIECE OF WHITE PAPER BETWEEN THE MAKS AND PHOTO.

8. WITH THE MASK DOWN, MAKE A NORMAL LINE SHOT. DO NOT MOVE THE PHOTOGRAPH OR FILM.

9. LEAVE THE VACUUM ON, RAISE THE MASK, REMOVE THE PAPER, AND THEN SHOOT A NORMAL HALFTONE.



10. PROCESS THE FILM.

11. MAKE A CONTACT PRINT WITH A GOOD HALFTONE (TONAL RANGE) OF THE SUBJECT AND NO BACKGROUND. THE EDGE CUTTING SHOULD BE CLEAR, ACCURATE, AND WITHOUT ANY BURRS.

12. USE THE SAME COPY AND MASK THAT YOU USED FOR STEP 2 & 3 TO MAKE A PHANTOM.

   A. EXPOSE THE MASK OVER THE PHOTOGRAPH & PAPER FOR 1/2 THE NORMAL MAIN EXPOSURE TIME WITH THE HALFTONE SCREEN IN PLACE.

   B. WITHOUT MOVING THE SCREEN, FILM OR PHOTOGRAPH, MAKE A NORMAL HALFTONE OF THE ENTIRE PHOTOGRAPH.

JOB STEPS

13. PROCESS THE FILM.

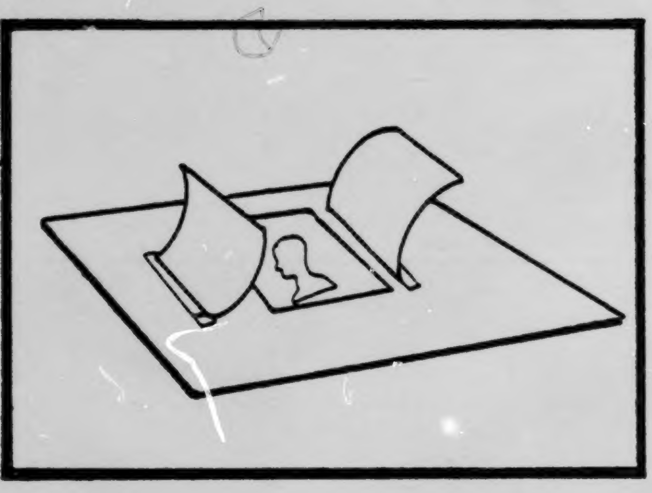
14. MAKE A CONTACT PRINT.

NOTE: THE IMAGE AREA SHOULD BE A GOOD HALFTONE. THE BACKGROUND SHOULD BE GRAY WITH LESS THAN A 50% DOT IN THE SHADOW AREAS. A LONGER 'MASK' EXPOSURE WOULD REDUCE THE SIZE OF THE SHADOW DOTS.

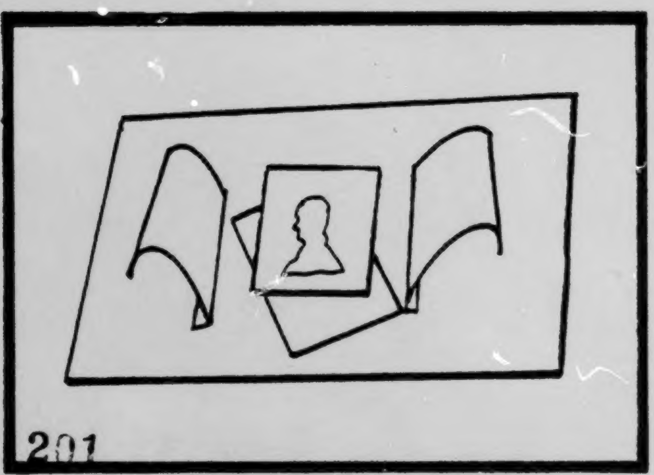
15. ANOTHER WAY TO MAKE A PHANTOM PRINT IS: MAKE A NORMAL HALFTONE NEGATIVE, PROCESS, AND DRY. DO THIS NOW.

16. CUT A RUBYLITH MASK OF YOUR SUBJECT (BACKGROUND IS CLEAN OR OPEN).

17. MAKE A CONTACT NEGATIVE OF THE MASK SO YOU HAVE A NEGATIVE AND A MASK POSITIVE.

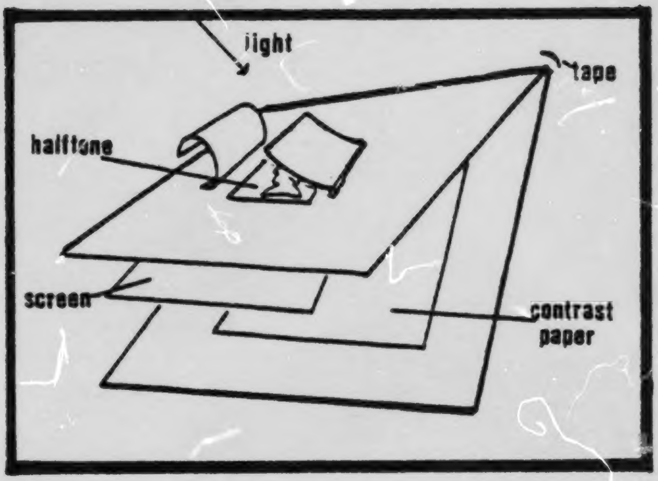


18. STRIP THE MASK AND THE NEGATIVE TO THE HALFTONE SO EACH CAN HINGE (LIKE IN STEP #2) CENTERED ON A 10 X 15 MASKING SHEET (WE NEED THE EXTRA ROOM TO ANGLE THE SCREEN). THEN, CUT A WINDOW.

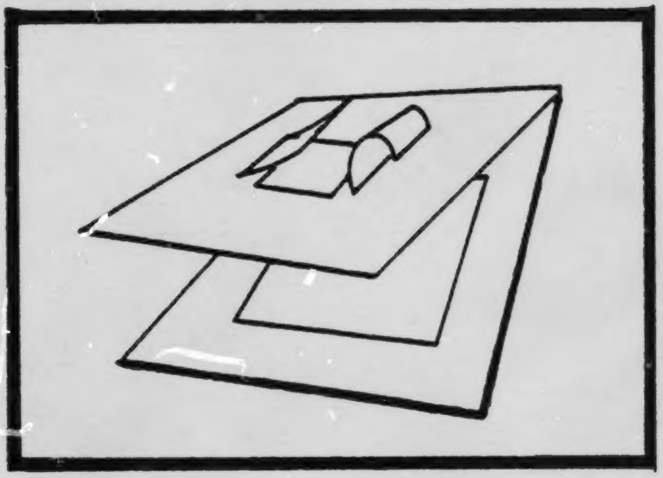


19. BEFORE BOING IN THE DARKROOM, PLACE A 50% SCREEN TINT UNDER THE HALFTONE AND ANGLE IT 30° SO THE MORIE PATTERN DISAPPEARS. THEN, TEMPORARILY TAPE THE SCREEN.

20. IN THE DARKROOM, CENTER AND THEN TAPE A 10 X 12,5 CM CONTACT PRINT PAPER TO A SECOND MASKING SHEET WHICH IS TAPED TO THE FIRST (SO THE PRINT WILL STAY IN REGISTER WITH THE HALFTONE).



21. FOLD BACK THE NEGATIVE MASK SO THE RUBYLITH MASK WILL PROTECT THE SUBJECT AND MAKE A NORMAL CONTACT EXPOSURE.



22. FOR THE SECOND EXPOSURE, REMOVE THE SCREEN TINT AND PLACE THE NEGATIVE MASK OVER THE HALFTONE SO ONLY THE SUBJECT WILL BE EXPOSED. THEN, MAKE A SECOND NORMAL, CONTACT EXPOSURE (DOUBLE BURN).

23. PROCESS THE CONTACT PAPER. THE PRINT SHOULD LOOK THE SAME AS FOR STEP #14.

24. SHOW ALL THREE PRINTS TO YOUR INSTRUCTOR (DROPOUT AND TWO PHANTOM HALFTONES) FOR EVALUATION AND CREDIT.

graphics

unit: CAMERA (PHOTOMECHANICAL REPRODUCTION)

capital area career center

1401 10 031

module: 1401 10 031 3 **date:** 8/77 **level:** III

skill title: ADVANCED COMBINATION PROJECT

developed & written by: GLEN PETTIT

visuals by:

WORD GUIDE

COMBINATION - INCLUDING MANY BASIC SKILLS.

PHOTO-ART - CREATIVE DESIGN MADE WITH A CAMERA AND NEGATIVES.

PERFORMANCE OBJECTIVE

YOU ARE GOING TO LEARN:

HOW TO DESIGN, PLAN, AND PRODUCE AN ADVANCED COMBINATION JOB.

IN ORDER TO DO THIS YOU WILL NEED:

PROCESS CAMERA
DARKROOM & CHEMICALS
COPY
ALL BASIC CAMERA MATERALS

WE WILL KNOW YOU CAN DO IT WHEN:

1. YOU CAN DESIGN, PLAN, AND PRODUCE AN ADVANCED, ON-CAMERA PHOTO-ART JOB DOING ALL WORK YOURSELF.
2. THE JOB MUST BE CREATIVE, ACCEPTABLE TO THE CUSTOMER (OR INSTRUCTOR) AND PRINTABLE.

A TAPE OF THIS MODULE IS AVAILABLE.

JOB STEPS

1. FIRST, COMPLETE ALL CAMERA MODS IN THIS UNIT (1401 10 001 - 1401 10 030).

   NOTE: THIS IS A SPECIAL ADVANCED COMBINATION PROJECT USING ALL OF YOUR BASIC CAMERA SKILLS.

2. DESIGN A COVER OR FULL PAGE, ON-CAMERA PHOTO-ART JOB, INCLUDING AT LEAST ONE HALFTONE WITH LINE COPY AND PRINTED IN AT LEAST TWO COLORS.

   NOTE: IT IS BEST TO DO THIS WITH A LINE PRODUCTION JOB SO YOU CAN WORK WITH THE CUSTOMER AND SEE YOUR PROJECT PRINTED.

3. YOUR INSTRUCTOR WILL HELP YOU SELECT AND PLAN YOUR JOB. ONCE YOU HAVE THE PHOTOGRAPH AND COPY, HAVE YOUR INSTRUCTOR CHECK EACH STEP:

   A. MAKE AT LEAST 3 LAYOUTS

   B. MAKE A FINAL COMPREHENSIVE

   C. LIST IN ORDER ALL STEPS TO COMPLETION

   D. LIST ALL EXPOSURE TIMES AND MATERIALS

   E. DO THE ADVANCED-COMBINATION PROJECT

   F. MAKE A FULL-SIZE COLOR-KEY PROOF

graphics

unit: CAMERA (PHOTOMECHANICAL REPRODUCTION)

capital area career center

1401 10 032

module: 1401 10 032 3 **date:** 10/77 **level:** IV

skill title: COLOR SEPARATION (35 MM PHOTOGRAPHY)

developed & written by: GLEN PETTIT

visuals by:

WORD GUIDE

COLOR SEPARATION - BREAKING A FULL COLOR PICTURE DOWN INTO ITS BASIC FOUR COLORS.

PERFORMANCE OBJECTIVE

YOU ARE GOING TO LEARN:

HOW TO USE A 35 MM CAMERA, THE ENLARGER AND THE PROCESS CAMERA TO PRODUCE A SIMPLE COLOR SEPARATION.

IN ORDER TO DO THIS YOU WILL NEED:

AN ADJUSTABLE 35 MM CAMERA AND TRIPOD
A LIGHT METER, 18% GRAY CARD AND COLOR CONTROL SCALE
COLOR SEPARATION FILTERS
TRI-X FILM, PRINT PAPER AND HALFTONE FILM
HALFTONE SCREEN
AN ENLARGER, A PROCESS CAMERA AND DARKROOM

WE WILL KNOW YOU CAN DO IT WHEN:

1. YOU CAN PHOTOGRAPH A STILL-LIFE SUBJECT USING THE THREE BASIC COLOR FILTERS WITH A 35 MM CAMERA, AND THEN PROCESS THE FILM.
2. YOU CAN MAKE FOUR CORRECTLY EXPOSED AND PROCESSED PRINTS WITH AN ENLARGER.
3. YOU CAN MAKE FOUR HALFTONES (ONE FOR EACH COLOR).
4. YOU CAN MAKE A COLOR KEY PROOF OF THIS FOUR-COLOR SEPARATION.
5. YOUR FINAL PROOF IS VERY SIMILAR TO THE ORIGINAL SUBJECT.

A TAPE OF THIS MODULE IS AVAILABLE.

WORD GUIDE

SPECIALIZED - DOES ONLY ONE KIND OF JOB.

INFORMATION

THE MOST EXPENSIVE AND DIFFICULT JOB IN A DARKROOM IS MAKING COLOR-SEPARATIONS. MOST SHOPS WILL SENT THEIR COLOR SEPARATION WORK TO A SPECIALIZED SHOP BECAUSE IT IS SO HARD TO DO AND TAKES SO MUCH TIME.

A FOUR-COLOR SEPARATION IS TAKING A FULL-COLOR PICTURE OR PHOTOGRAPH AND REDUCING IT DOWN INTO ITS FOUR BASIC COLORS:

MAGENTA (A SOFT RED COLOR)
CYAN (A BRIGHT BLUE COLOR)
YELLOW
BLACK (ACTUALLY ALL THREE COLORS COMBINED)

FIRST YOU WILL VIEW A SLIDE/TAPE FROM KODAK CALLED "BASICS OF FOUR-COLOR REPRODUCTION", WHICH IS THE WAY MOST COLOR-SEPARATIONS ARE MADE.

TO LEARN THE BASICS OF COLOR-SEPARATION, YOU WILL USE A 35 MM CAMERA, THE ENLARGER AND THE PROCESS CAMERA. THIS METHOD IS MUCH FASTER, LESS EXPENSIVE AND MUCH EASIER TO DO IN A SCHOOL. IT IS NOT THE METHOD USED IN THE INDUSTRY TODAY BUT WILL GIVE YOU AN UNDERSTANDING OF THE BASICS OF FOUR-COLOR SEPARATION.

FOLLOW THE STEP-BY-STEP INSTRUCTIONS CAREFULLY IN THE BOOKLET YOU WILL BE USING.

NOTE: YOU MUST COMPLETE ALL OF THE PRIOR 31 MODS IN THIS CAMERA UNIT AND ALL 10 MODS IN THE PHOTOGRAPHY UNIT (#16).

JOB STEPS

1. WATCH AND LISTEN TO THE KODAK SLIDE/TAPE "BASICS OF 4-COLOR REPRODUCTION" IN THE MEDIA AREA.

2. CHECK-OUT THE STEP-BY-STEP BOOKLET FOR THIS MOD (COLOR SEPARATION, #1401 10 032) AND LOOK OVER THE ENTIRE BOOK. YOU MUST BE ABLE TO DO ALL OF THE FOLLOWING:

   A. USE AN ADJUSTABLE 35 MM CAMERA (1401 10 003).
   B. DEVELOP BLACK AND WHITE ROLL FILM (1401 16 004).
   C. MAKE A CONTINUOUS TONE PRINT WITH AN ENLARGER (1401 16 006).
   D. MAKE HALFTONES (1401 10 023).
   E. STREP AND RUN DUOTONES (1401 12 007).
   F. MAKE A COLOR-KEY PROOF (1401 12 007).

3. BEFORE STARTING, CHECK WITH YOUR INSTRUCTOR AND REVIEW EVERYTHING:

   SUBJECT, COLOR CONTROL, FILTERS, CAMERA, FILM, LIGHTING, PROCESSING, ENLARGER, PRINT PAPER, GRAY SCALE, SCREEN RULING, HALFTONE FILM AND PROOFING.

4. TAKE ALL EQUIPMENT AND MATERIALS TO YOUR WORK AREA.

5. YOU HAVE ABOUT EIGHT DAYS TO COMPLETE THIS MODULE SO USE YOUR TIME WISELY. IT WILL TAKE SEVERAL DAYS TO CORRECT MOST MISTAKES. KEEP TRACK OF THE TIME SPENT ON EACH OPERATION AND THE INSTRUCTOR WILL REVIEW YOUR PROGRESS WHEN YOU ARE FINISHED.

6. BEGIN THE JOB STEPS (SEE BOOKLET). IF YOU HAVE ANY PROBLEMS, SEE YOUR INSTRUCTOR.

7. WHEN FINISHED, SHOW YOUR COLOR-KEY PROOF, THE FOUR HALFTONES, THE FOUR PRINTS, YOUR NEGATIVES, YOUR TIME SHEET AND ALL YOUR CHARTS TO THE INSTRUCTOR FOR EVALUATION.

graphics

unit: STRIPPING

capital area career center

1401 11 001

module: 1401 11 001 3 date: 7/77 level: _____

skill title: BASIC TOOLS AND EQUIPMENT USED IN STRIPPING

developed & written by: GLEN PETTIT AND REVISED BY DWIGHT HORNER

visuals by: MARY ANN GAMEL

WORD GUIDE

STRIPPING - IN OFFSET LITHOGRAPHY, THE PLACING IN POSITION OF NEGATIVES OR POSITIVES ON A GOLDENROD FLAT BEFORE PLATE-MAKING

PERFORMANCE OBJECTIVE

YOU ARE GOING TO LEARN:

HOW TO PROPERLY IDENTIFY, USE AND CARE FOR THE EQUIPMENT AND TOOLS NECESSARY IN A STRIPPING OPERATION.

IN ORDER TO DO THIS YOU WILL NEED:

A LIGHT TABLE (NU ARC)
GEAR-TRACK REGISTER LIGHT TABLE (FOSTER)
T-SQUARE
LINE GAUGE
TRIANGLES (30° - 60° AND 45°)
RAZOR BLADE
X-ACTO KNIFE
SHEAR OR ROTARY CUTTER
SCISSORS
PAPER PUNCH
MAGNIFYING GLASS
BALL POINT PEN
SCRIBERS
OPAQUING BRUSHES
REGISTER PINS
MASKING SHEETS
RED LITHO TAPE
MASKING TAPE
SCOTCH MAGIC TAPE
OPAQUE
GLASS CLEANER
A SCRAP NEGATIVE

WE WILL KNOW YOU CAN DO IT WHEN:

1. AFTER EXAMINATION, ALL ITEMS ARE IN GOOD, USABLE AND SAFE WORKING CONDITION.
2. YOUR EVALUATION TEST SCORE (AT THE END OF MOD) SHOWS YOU HAVE A GOOD BASIC UNDERSTANDING OF HOW TO CORRECTLY USE ALL OF THE MATERIALS AND EQUIPMENT.

WORD GUIDE

DIFFUSED - LIGHT IS DIFFUSED WHEN IT IS SPREAD OUT TO COVER THE ENTIRE GLASS SURFACE ON THE TOP OF THE LIGHT TABLE

SQUARE - EACH STRAIGHT EDGE MUST BE EXACTLY AT A 90° ANGLE IN RELATION TO THE ADJOINING STRAIGHT EDGE

FLUORESCENT - BRIGHT AND GLOWING TUBULAR LIGHT

INFORMATION

1. NU ARC LIGHT TABLES

   A. THE TABLE HAS A GLASS TOP AND IS LIGHTED FROM BELOW.
   B. THE LIGHT IS DIFFUSED BY GLOWING THROUGH FROSTED GLASS OR PLEXI-GLASS.
   C. THE TABLE EDGES (USUALLY STEEL) MUST BE EXACTLY STRAIGHT AND SQUARE.
   D. LIGHT TABLES COME IN VARIOUS SIZES. OUR TABLES ARE 18" X 20" (ALWAYS MEASURED BY GLASS SIZE) AND COST APPROXIMATELY $175.00 EACH.
   E. LIGHT TABLES ARE HIGH ENOUGH TO WORK ON BY EITHER STANDING OR SITTING ON A HIGH STOOL.

2. FOSTER GEAR-TRACK REGISTER LIGHT TABLE

   A. THE LARGER LIGHT TABLES IN THE STRIPPING AREA (30" X 40").
   B. HAS A GEAR-TRACK ON EACH SIDE OF THE GLASS CONNECTED WITH A METAL STRAIGHT-EDGE THAT CAN BE MOVED UP AND DOWN ON THE GLASS-TOP SURFACE.
   C. HAS TWO LIGHT SWITCHES ON FRONT (RIGHT SIDE) OF LIGHT TABLE.
      1. THE SWITCH ON THE RIGHT TURNS ON THREE FLUORESCENT LIGHTS NEEDED FOR STRIPPING.
      2. THE SWITCH ON THE LEFT TURNS ON TWO ADDITIONAL FLUORESCENT LIGHTS FOR OPAQUING.
      3. THE DOOR ON THE FRONT OF THE TABLE IS OPENED FOR CHANGING FLUORESCENT LIGHT TUBES.

WORD GUIDE

HORIZONTAL - RUNNING STRAIGHT ACROSS, FROM SIDE-TO-SIDE

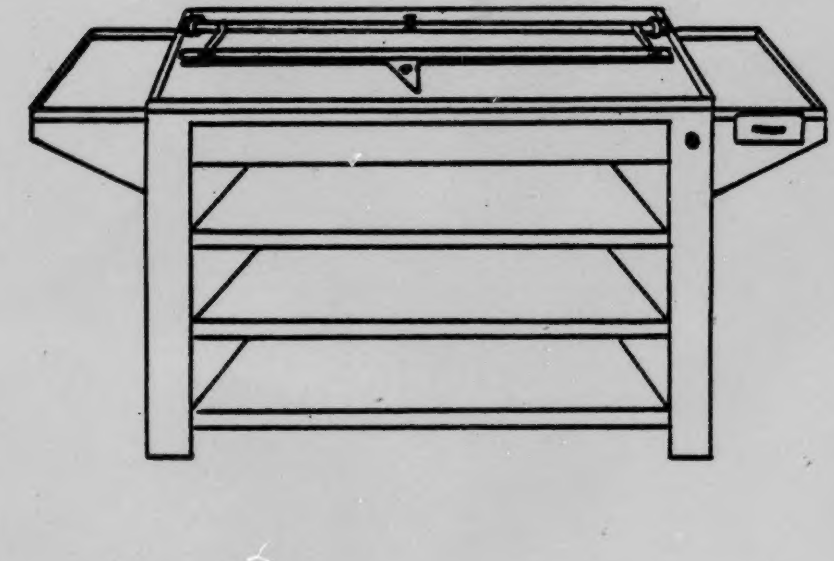
PERIODICALLY - EVERY SO OFTEN; AT SPECIFIC TIMES

INFORMATION

D. AN ENGRAVED MEASURING SCALE IS LOCATED ON THE LEFT TOP SURFACE OF THE TABLE FOR QUICK MEASURING OF HORIZONTAL LINES.

E. CARE OF THE LIGHT TABLE:
   1. LUBRICATE GEAR TRACKS PERIODICALLY WITH A SMALL AMOUNT OF DRY-GRAPHITE TO KEEP THEM EASILY MOVABLE.
   2. CLEAN GLASS AND BOTTOM SURFACE OF THE STRAIGHT-EDGE WITH A GLASS CLEANER AND A PAPER TOWEL.
   3. REMOVE HEAVY WAX AND TAPE ON GLASS SURFACE WITH A RAZOR BLADE.
   4. KEEP HEAVY EQUIPMENT (SUCH AS TAPE DISPENSERS) OFF THE GLASS SURFACE BECAUSE IT COULD BREAK THE GLASS.

F. THE COST OF OUR LIGHT TABLES IS APPROXIMATELY $700.00.



WORD GUIDE

VERTICAL - UP AND DOWN; TOP TO BOTTOM

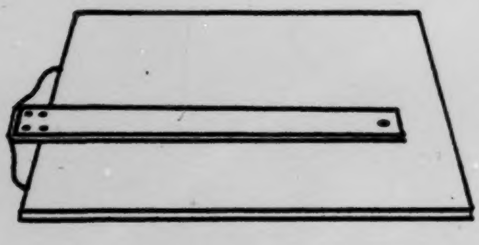
ACCURATE - CORRECT OR EXACT MEASUREMENT

BEVELED - SLANTED, TILTED

INFORMATION

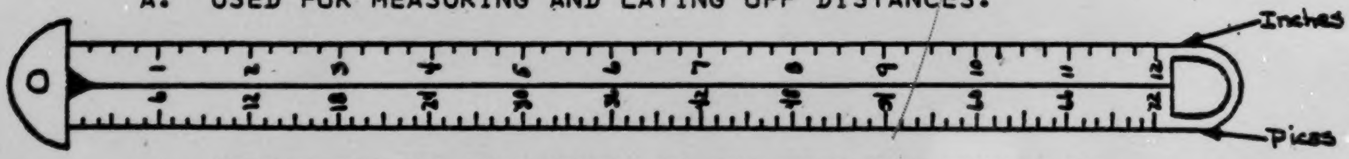
3. T-SQUARE

A. A THIN, STRAIGHT EDGE CALLED THE BLADE FASTENED TO A SECTION CALLED THE HEAD.
B. HOLDING THE T-SQUARE HEAD FIRMLY AGAINST THE TABLE SIDE, DRAW HORIZONTAL LINES USING THE UPPER EDGE OF THE T-SQUARE BLADE.
C. HOLD BOTH T-SQUARE AND TRIANGLE FIRMLY AGAINST THE TABLE SURFACE WHEN DRAWING VERTICAL LINES.
D. T-SQUARE BLADE MUST ALWAYS BE TIGHT AND SQUARE ON THE T-SQUARE HEAD.
E. THE BOTTOM SIDE OF THE BLADE MUST BE KEPT CLEAN AND FREE OF NICKS.
F. A GOOD METAL 24" T-SQUARE COSTS APPROXIMATELY $20.00.



4. LINE GAUGES

A. USED FOR MEASURING AND LAYING OFF DISTANCES.



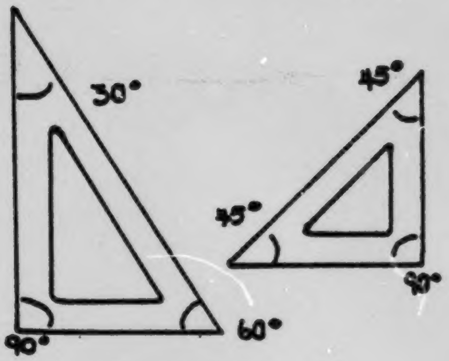
B. MARKED OFF IN PICA UNITS ON ONE EDGE AND INCHES ON THE OTHER EDGE.
C. METAL LINE GAUGES ARE USED IN THE PRINTING INDUSTRY. PLASTIC LINE GAUGES ARE AVAILABLE BUT ARE NOT AS ACCURATE FOR MEASURING.
D. THE THINNER THE MEASURING EDGE, THE MORE WE CAN MARK OFF MEASUREMENTS. MANY LINE GAUGES ARE BEVELED ON THE EDGE TO ASSIST IN MAKING MORE ACCURATE MEASUREMENTS.
E. OTHER LINE GAUGES ARE AVAILABLE IN LENGTHS LIKE 18" AND 24".
F. 12" LINE GAUGES COST APPROXIMATELY $3.00 AND 18" LENGTHS COST APPROXIMATELY $4.50 EACH.

WORD GUIDE

CONVENIENT - EASILY AVAILABLE, EASY TO DO, USE OR GET

ALIGNMENT - POSITIONING

INFORMATION



5. TRIANGLES
   - A. TWO TYPES:
     1. TRANSPARENT PLASTIC
     2. STAINLESS STEEL
   - B. SIZES AND SHAPES:
     1. 30°, 60°, 90° ANGLES, AND 45°, 90° ANGLES
     2. LENGTHS OR HEIGHTS AVAILABLE INCLUDE 6", 8", 10", 12", 15", AND 18".
   - C. PLASTIC TRIANGLES ARE CONVENIENT WHEN THERE IS A NEED TO SEE THROUGH TO THE WORK TO MAKE VERTICAL ALIGNMENTS.
   - D. METAL TRIANGLES ARE BEST USED WHEN IT IS NECESSARY TO USE THE EDGE AS A GUIDE TO CUT FILM OR PAPER WITH AN X-ACTO KNIFE OR RAZOR BLADE.
   - E. ALWAYS APPLY PRESSURE TO THE TRIANGLE WHILE USING THE EDGE TO DRAW VERTICAL OR ANGULAR LINES OR TO ACCURATELY CUT FILM OR PAPER.
   - F. THE BOTTOM SIDE OF TRIANGLES CAN BE KEPT CLEAN BY USING GLASS CLEANER AND A PAPER TOWEL.

6. RAZOR BLADES
   - A. USE ONLY SINGLE-EDGE BLADES FOR SAFE CUTTING OF PAPER AND FILM.
   - B. CUTTING AND CARE OF A RAZOR BLADE:
     1. HOLD THE BLADE WITH THE FORE-FINGER ON TOP AND THE THUMB AND INDEX FINGER ON EACH SIDE.
     2. MOVE YOUR WHOLE ARM AND BODY TO KEEP APPLYING CONSISTENT PRESSURE ON THE BLADE.

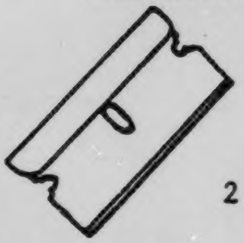
WORD GUIDE

RENEW - MAKE NEW AGAIN

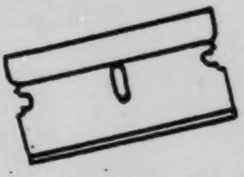
DEPOSIT - PUT INTO SOMETHING

INFORMATION

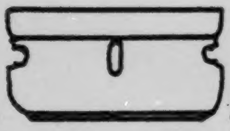
6. B. 3. NOTICE THE ANGLE OF RAZOR BLADE TO MATERIAL YOU ARE CUTTING



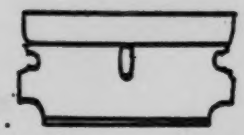
1\.
This quickly dulls the cutting edge



2\.
Correct angle



3\.
Worn-out, dull and rounded corners



4\.
Sharp, newly chipped cutting edges

4. IN ILLUSTRATION #1 ABOVE, THIS ANGLE FOR CUTTING WILL QUICKLY DULL THE CUTTING EDGE.
5. WHEN THE BLADE CORNERS BECOME ROUNDED AS IN ILLUSTRATION #3 ABOVE, QUICKLY RENEW THE CUTTING EDGE BY BREAKING IT OFF WITH PLIERS AS SHOWN IN ILLUSTRATION #4.
6. WHEN THROWING AWAY A RAZOR BLADE IN THE WASTE BASKET, TAPE THE BLADE EDGE TO A SCRAP PIECE OF PAPER OR ANOTHER DULL RAZOR BLADE. MANY SHOPS HAVE SPECIAL CANS IN WHICH TO DEPOSIT OLD RAZOR BLADES.
7. WHEN CUTTING VERY SMALL AREAS, KEEP YOUR FINGERS AND YOUR PALM CLOSE TO THE WORK AREA FOR EXTRA FINE CONTROL OF THE RAZOR BLADE.
8. USING EXCESSIVE PRESSURE TO CUT WITH A DULL RAZOR BLADE ON THE LIGHT TABLE SURFACE WILL CHIP THE GLASS SURFACE ON THE TABLE.

C. OTHER TYPES OF CUTTING TOOLS INCLUDE THE "BREAK-AWAY" BLADE TYPE OF KNIVES AND THE X-ACTO KNIFE. EACH TYPE HAS AN EASY-TO-USE HANDLE.

WORD GUIDE

SCRIBE - CUT OR SCRATCH

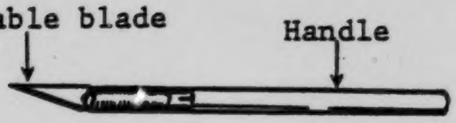
EMULSION - THE LIGHT SENSITIVE SIDE OF FILM ON WHICH THE IMAGE APPEARS

STATIONARY - UNMOVABLE, STABLE

JOG - PLACE OR POSITION PAPER AGAINST A STOP TO ASSURE CUTTING PAPER IS EXACTLY THE SAME SIZE AFTER CUTTING

INFORMATION

7. X-ACTO KNIFE



   A. USED FOR CUTTING EITHER PAPER OR FILM.
   B. WITH THE HANDLE, IT IS EASY TO MOVE AROUND PIECES OF COPY WHEN WORKING WITH EITHER PAPER OR FILM.
   C. THE KNIFE CAN ALSO BE USED TO SCRIBE REFERENCE MARKS IN THE EMULSION OF FILM.
   D. THE BLADES CAN EASILY BE SHARPENED BY USING A FINE WET STONE WITH A DROP OF OIL ON THE SURFACE OF THE STONE.

8. SHEAR OR ROTARY CUTTER

   A. THE CUTTING ACTION IS SIMILAR TO THAT OF A PAIR OF SCISSORS WITH A STATIONARY BASE.
   B. CUTTING WITH A SHEAR CUTTER:
      1. BY GENTLY PUSHING THE KNIFE TO THE LEFT AS IT COMES DOWN, YOU WILL GET A CLEAN CUT.
      2. THE BOARD HAS GROOVES EVERY 1/2". THEREFORE, YOU CAN PLACE A FINGERNAIL IN THE APPROPRIATE GROOVE TO OBTAIN THE DESIRED SIZE SHEET WHEN CUT. JOG PAPER AGAINST FINGERNAIL, THEN APPLY PRESSURE ON THE SURFACE TO PREVENT ANY MOVEMENT OF THE PAPER WHILE CUTTING.
   C. FOR SAFETY REASONS, THE BLADE MUST ALWAYS BE LEFT DOWN AND LOCKED WHEN NOT IN USE.
   D. CUTTING WITH A ROTARY CUTTER:
      1. THE CIRCULAR BLADE IS GEAR-DRIVEN AND IT IS PULLED ACROSS THE PAPER TOWARD YOU (ONE-WAY ONLY) WHEN CUTTING.
      2. BY HOLDING THE BLACK HANDLE DOWN, YOU WILL GET A SHARP, CLEAN CUT.

WORD GUIDE

ROTATE - TURN AROUND

VACUUMED - SUCKED OUT

INFORMATION

9. SCISSORS

   A. THE CUTTING BLADES OF QUALITY SCISSORS COME IN MANY LENGTHS SUCH AS 4", 6", OR 8".
   B. TO GET AN EASY, CLEAN CUT, SLIGHTLY PULL APART YOUR FINGERS AS YOU CUT TO APPLY INWARD PRESSURE ON THE CUTTING BLADE.
   C. SCISSORS BLADES MAY BE SHARPENED BY LIGHTLY USING A HONE. STROKE THE BLADE FROM OUTSIDE, UP AND INWARD ONLY.
   D. SCISSORS WILL RUST; THEREFORE, KEEP THEM DRY AND FREE OF CHEMICALS.
   E. WHEN CUTTING CORNERS AND CIRCLES, ROTATE THE PAPER WHILE CUTTING.

10. PAPER PUNCH

   A. THE SAME AS NEWSPAPER BOYS USE, IT PUNCHES A 1/4" DIAMETER HOLE AND HAS A ONE INCH THROAT.
   B. USES FOR THE PAPER PUNCH:
      1. PUNCHING PIN REGISTER HOLES TO HOLD TOGETHER THE FINISHED FILM FLAT AND PLATE WHILE AIR IS BEING VACUUMED OUT OF THE PLATEMAKER.
      2. PUNCHING PIN REGISTER HOLES IN MULTI-COLOR FILM FLATS.
   C. THROW AWAY THE REMOVED PAPER HOLE TO KEEP IT FROM PARTIALLY COVERING THE IMAGE DURING PLATEMAKING.

11. MAGNIFYING GLASS

   A. USED TO CHECK REGISTER AND IMAGE QUALITY.
   B. MAGNIFYING GLASSES COME IN MANY "POWERS," SUCH AS 6X (6 TIMES) AND 10X (10 TIMES) WHICH ARE COMMONLY USED IN STRIPPING (A 6X GLASS WILL MAGNIFY SIX TIMES WHEN HELD ONLY AGAINST WORK)
   C. HIGHER QUALITY MAGNIFYING GLASSES THAT REQUIRE A SMALL ADJUSTMENT FOR FOCUS ARE AVAILABLE.
   D. COST WILL RANGE FROM $3.50 TO $15.00 FOR MAGNIFYING GLASSES IN OUR SHOP.

WORD GUIDE

UNIFORM - THE SAME

APPROXIMATELY - 'ABOUT'; ALMOST

RETAINS - KEEPS

INFORMATION

12. BALL POINT PEN

    A. FOR GREATER ACCURACY IN STRIPPING, USE A FINE POINT PEN.
    B. AIDS IN USING THE PEN TO OBTAIN CONSISTENCY IN LINE QUALITY:
        1. KEEP THE SAME PRESSURE ON THE PEN AT ALL TIMES.
        2. PULL THE PEN ACROSS PAPER AT APPROXIMATELY THE SAME SPEED.
        3. TO AVOID SMEARS FROM INK BUILD-UP ON THE END, DO NOT ROTATE PEN WHILE RULING LINES.
        4. HOLD THE PEN VERTICAL TO THE PAPER AND STRAIGHT EDGE WHILE RULING.
        5. CLEAN OFF INK BUILD-UP FROM THE END FREQUENTLY TO AVOID SMEARING (USE A SHOP CLOTH OR PAPER TOWEL).

13. SCRIBERS

    A. RAMSY FILM LINE SCRIBERS ARE USED TO REMOVE A THIN, UNIFORM LAYER OF EMULSION FROM THE FILM BASE.
    B. PRACTICE IS REQUIRED ON SCRAP FILM TO OBTAIN THE CORRECT PRESSURE AND PEN ANGLE FOR HIGH QUALITY AND NEAT LINES.
    C. RAMSY SCRIBERS COST APPROXIMATELY $12.00 FOR A SET OF THREE VARIOUS WIDTH SCRIBES AND SCRIBE HOLDERS.

14. OPAQUE BRUSHES

    A. THESE BRUSHES ARE USED FOR OPAQUING PIN HOLES ON NEGATIVES TO KEEP OUT UNWANTED LIGHT.
    B. THE MOST POPULAR BRUSH IS A CAMEL HAIR BRUSH THAT CAN BE PURCHASED IN SIZES FROM 00 TO 9.
        1. A NUMBER 1 IS A FINE BRUSH USED FOR SMALL AND CROWDED IMAGE-AREA OPAQUING.
        2. A NUMBER 8 IS A BOLD BRUSH USED FOR OPAQUING LARGE, OPEN AREAS ON THE NEGATIVE.
        3. A NUMBER 2 OR 3 BRUSH IS THE ONE MOST USED BY STRIPPERS.
    C. CLEAN BRUSHES ONLY WITH WARM WATER AND DRY SO THE END OF THE BRUSH RETAINS A NICE POINT.

WORD GUIDE

TABS - SMALL SCRAP PIECES OF FILM USED TO ATTACH STRIPPING FLATS TO REGISTER PINS. 1/4" PUNCHED HOLE GOES OVER REGISTER PIN PEG ON ONE END AND TAPED TO FLAT ON THE OTHER END OF THE TAB

TRANSLUCENT - ALLOWS LIGHT TO PASS THROUGH IT; CLEAR

INFORMATION

15. REGISTER PINS

A. CARLSON REGISTER PINS ARE 1/4" DIAMETER PEGS ON A SMALL, THIN PIECE OF METAL.
B. THEY ARE USED TO REGISTER PIECES OF FILM, FILM FLATS, AND PLATES.
C. A 1/4" PAPER PUNCH IS USED TO PUNCH HOLES IN SMALL SCRAP PIECES OF FILM TO MAKE TABS TO ATTACH TO FLATS FOR REGISTRATION PURPOSES.
D. REGISTER PINS COST APPROXIMATELY $4.50 A PAIR.

16. MASKING SHEETS

A. 80# DOUBLE-COATED GOLDENROD MASK PAPER IS USED AS THE BASIC FLAT MATERIAL TO STRIP-UP OUR NEGATIVES.
B. THE MASK PAPER IS ALWAYS SLIGHTLY LARGER THAN THE OFFSET PLATE FOR WHICH IT IS INTENDED.
C. THE MASKING PAPER WILL MASK OUT LIGHT NEEDED TO EXPOSE PLATES, BUT IT IS STILL TRANSLUCENT ENOUGH TO SEE A FILM IMAGE THROUGH IT ON THE LIGHT TABLE.
D. WHEN NEGATIVES ARE ATTACHED TO THE MASKING SHEET, WE CALL THAT A "FLAT".
E. PLASTIC MASKING SHEETS ARE USED FOR HIGH QUALITY, CLOSE-REGISTER WORK SUCH AS FOUR/COLOR PROCESS PRINTING.

17. RED LITHO TAPE

A. USED BY LITHOGRAPHERS FOR STRIPPING, IT COMES ON ROLLS IN WIDTHS OF BOTH 1/4" AND 1/2".
B. THE TAPE ATTACHES THE NEGATIVE TO THE MASKING SHEET.
C. THE TAPE CAN ALSO BE USED OVER UNWANTED HOLES OR CUTS IN THE MASKING SHEET TO BLOCK OUT LIGHT WHEN EXPOSING PRE-SENSITIZED PLATES.

WORD GUIDE

EXCESSIVE - EXTRA; A LARGE AMOUNT; MORE THAN USUAL

INFORMATION

18. MASKING TAPE

    A. WE USE 3/4" WIDE TAPE FOR TEMPORARY HOLDING ONLY. FOR EXAMPLE, WE TAPE MASKING SHEETS TO THE SURFACE OF THE LIGHT TABLE TO BE RULED AND STRIPPED. WHEN THE JOB IS DONE, THE TAPE IS TAKEN OFF AND THROWN AWAY.
    B. MASKING TAPE COMES UP EASIER THAN CELLOPHANE TAPE AND IT IS NOT AS EXPENSIVE AS LITHO TAPE WHICH MAKES IT THE BEST TAPE TO USE FOR TEMPORARY HOLDING.

19. SCOTCH "MAGIC-TAPE"

    A. A NEARLY INVISIBLE, SEE-THROUGH TAPE THAT CAN BE USED OVER LINE IMAGE ON A PASTE-UP OR ON FILM NEGATIVES WITHOUT AFFECTING THE QUALITY OF IMAGE. IT WILL NOT REFLECT EXCESSIVE LIGHT OR YELLOW WITH AGE.
    B. ONE CAN WRITE ON THE TAPE AS WELL AS OPAQUE ANY PIN HOLES THE TAPE MAY BE COVERING ON A NEGATIVE.

20. OPAQUE

    A. OPAQUE IS USED TO BLOCK OUT LIGHT IN NON-IMAGE AREAS OF A NEGATIVE, SUCH AS PIN HOLES.
    B. A POINTED, CAMEL-HAIR BRUSH IS USED TO APPLY OPAQUE TO NON-IMAGE AREAS OF A NEGATIVE.
    C. A THIN LAYER OF OPAQUE CAN BE BRUSHED ON EITHER SIDE OF THE NEGATIVE. EXPERIENCED STRIPPERS OPAQUE ON THE EMULSION SIDE ONLY.
    D. OPAQUE COMES IN A SMALL BOTTLE IN THE FORM OF PASTE, THINNED WITH WATER.
    E. OPAQUING ERRORS ON FILM CAN BE CORRECTED BY USING A DAMP CLOTH TO LIGHTLY WIPE IT OFF THE FILM SURFACE.

21. GLASS CLEANER

    A. WE USE WINDEX WINDOW CLEANER TO CLEAN THE GLASS SURFACE ON OUR LIGHT TABLES.
    B. KIM-WIPES OR A CLEAN RAG IS USED WITH A THIN LAYER OF WINDEX SPRAY TO WIPE CLEAN THE GLASS SURFACE.
    C. FOR BEST CLEANING RESULTS, KEEP TURNING THE KIM-WIPE OR CLOTH TO USE A FRESH, CLEAN PART OF THE CLOTH UNTIL THE TABLE SURFACE IS FREE OF DIRT.

INFORMATION

EVALUATE YOUR KNOWLEDGE OF STRIPPING MATERIALS AND EQUIPMENT

ANSWERS ON BACK PAGE OF MOD.

1. OPAQUING BRUSHES RANGE IN SIZES FROM ______ TO _______ (FINE TO BOLD). THE SIZE MOST STRIPPERS USE IS A NUMBER ____ OR ____. WHAT MAKES THESE TWO SIZES MOST POPULAR?________________________________

2. WHAT IS THE PURPOSE OF GOLDENROD PAPER WHEN USED IN STRIPPING?

   (A)____

   (B)____

3. MASKING TAPE IN STRIPPING IS USED PRIMARILY FOR

   __________________________________.

4. BECAUSE IT WILL BLOCK OUT LIGHT, THE BEST TAPE TO FASTEN NEGATIVES TO MASKING FLATS IS:
   A. MASKING
   B. SCOTCH MAGIC
   C. RED LITHO
   D. ADHESIVE

5. WHY DO WE NEED TO USE A SUBSTANCE CALLED "OPAQUE" IN STRIPPING?____

6. OPAQUE CAN BE REMOVED FROM A NEGATIVE BY USING A __________ ______________.

7. LIST SOME OF THE BENEFITS THE GEAR-TRACK LIGHT TABLE OFFERS TO THE STRIPPER AS COMPARED TO A STANDARD LIGHT TABLE THAT REQUIRES THE USE OF A T-SQUARE.
   (A)____
   (B)____
   (C)____
   (D)____

8. THE TWO TYPES OF LINE GAUGES ARE _________________ AND _________________.

9. T-SQUARES ARE USED TO OBTAIN PRIMARILY STRAIGHT _____________ LINES WHILE TRIANGLES ARE HELD AGAINST THE _______________ OF THE T-SQUARE TO DRAW PRIMARILY ______________ LINES.

10. NAME THE TWO TYPES OF CUTTING EQUIPMENT COMMONLY USED BY THE STRIPPER TODAY DURING HIS STRIPPING OPERATIONS.
   (A)____________________
   (B)____________________

INFORMATION

EVALUATION, CONTINUED

11. A STRIPPER IS CONCERNED WITH THE REGISTRATION OF EVERY JOB. IN ORDER TO OBTAIN ACCURATE REGISTRATION, HE NEEDS SPECIALIZED EQUIPMENT WHICH MUST INCLUDE:
    (A) ______________________________
    (B) ______________________________
    (C) ______________________________

12. SCRIBERS ARE USED TO SCRIBE LINES ON NEGATIVES BY REMOVING A THIN, UNIFORM LAYER OF ____________________.

13. SCOTCH "MAGIC TAPE" IS NEARLY __________________ ON PASTE-UPS AND DOES NOT REFLECT EXCESSIVE LIGHT.

14. TO CUT CORNERS AND CIRCLES WITH SCISSORS, YOU SHOULD _______________ THE PAPER.

15. WHEN NEGATIVES ARE ATTACHED TO A MASKING SHEET, IT IS CALLED A ____________________.

INFORMATION

EVALUATION -ANSWERS

1. 00 TO 9
   2 OR 3
   CARRIES ENOUGH INK TO LAST IN OPAQUING A MINUTE OR TWO

2. (A) MASKING SHEET TO COVER OFFSET PLATES
   (B) FLAT TO FASTEN OR CARRY THE NEGATIVE

3. TEMPORARILY HOLDING

4. (C) RED LITHO

5. BLOCK OUT PIN HOLES AND SCRATCHES ON NEGATIVES TO KEEP LIGHT FROM PENETRATING NON-IMAGE PLACES DURING PLATEMAKING

6. DAMP CLOTH

7. (A) HORIZONTAL STRAIGHT-EDGE ATTACHED TO TABLE PERMANENTLY
   (B) MEASURING SCALE ENGRAVED ON LEFT SIDE FOR QUICK MEASURING
   (C) EXTRA LIGHT TUBES FOR MORE INTENSE LIGHT FOR OPAQUING
   (D) FRONT DOOR PANEL FOR CHANGING LIGHT TUBES -- DO NOT HAVE TO REMOVE GLASS

8. PLASTIC AND METAL

9. HORIZONTAL
   BLADE
   VERTICAL

10. (A) RAZOR BLADE
    (B) X-ACTO KNIFE

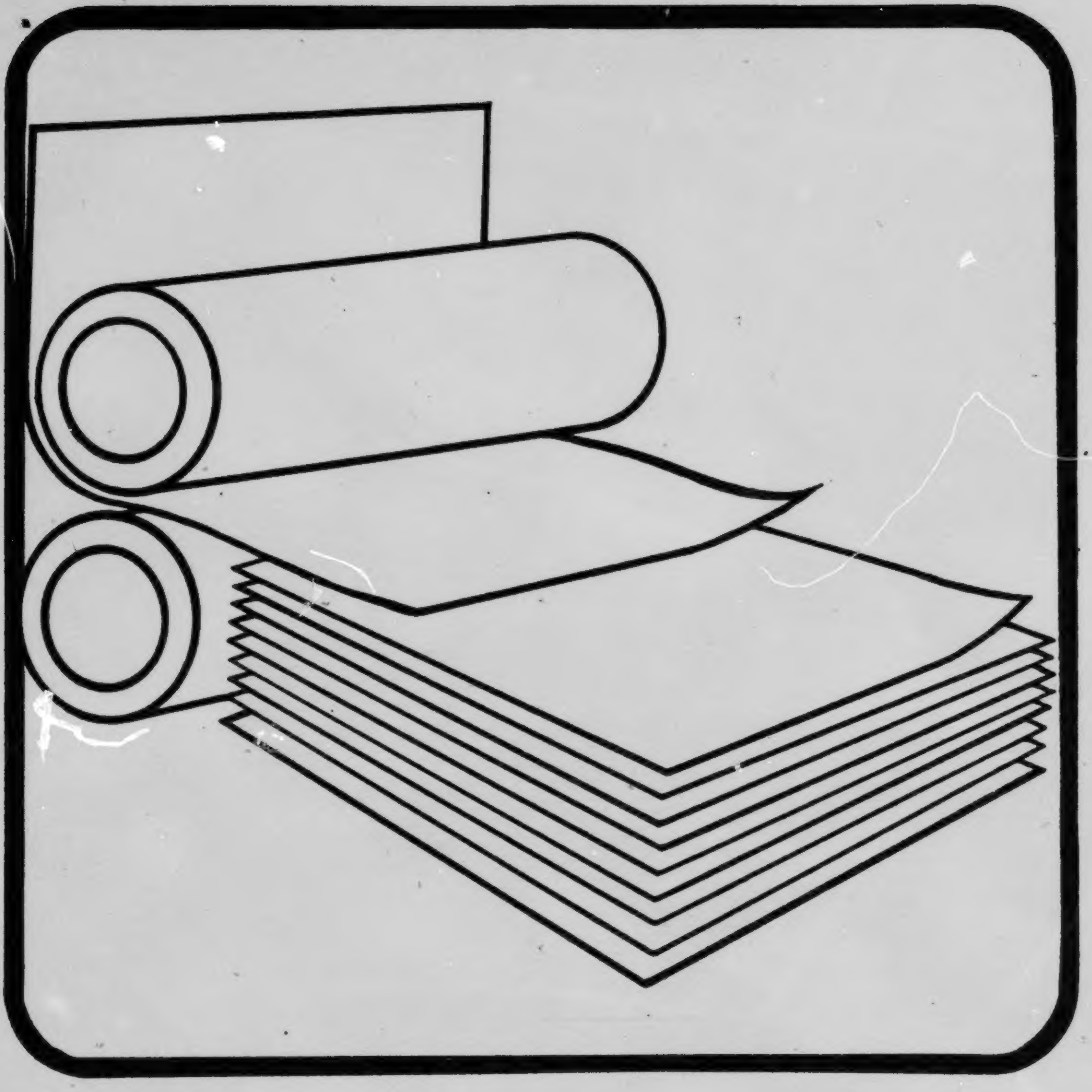
11. (A) A 1/4" PAPER PUNCH
    (B) REGISTER PINS
    (C) MAGNIFYING GLASS

12. EMULSION

13. INVISIBLE

14. ROTATE

15. FLAT



graphics

unit: STRIPPING

capital area career center

1401 11 002

module: 1401 11 002 3 **date:** JUNE 1977 **level:**

skill title: BASIC PROCEDURE FOR "LAYING OUT A FLAT"

developed & written by: GLEN PETTIT AND DWIGHT HORNER

visuals by: KIM ROACH

WORD GUIDE

FLAT - THE MASKING SHEET WITH ALL THE NEGATIVES TAPED ON IN POSITION.

LINE GAUGE - METAL RULER WHICH HAS INCHES AND THE PRINTER'S MEASURING SYSTEM (POINTS AND PICAS) ON IT.

PERFORMANCE OBJECTIVE

YOU ARE GOING TO LEARN:

HOW TO PROPERLY LAYOUT A FLAT FOR STRIPPING.

IN ORDER TO DO THIS YOU WILL NEED:

A LIGHT TABLE
LINE GAUGE
TRIANGLE
BALL POINT PEN
10" X 15" MASKING SHEET
MASKING TAPE
GLASS CLEANER
METAL T-SQUARE

WE WILL KNOW YOU CAN DO IT WHEN:

YOU HAVE DRAWN ALL GUIDE LINES ON THE FLAT ACCORDING TO SPECIFICATIONS SO THAT THE PROPERLY MARKED NEGATIVE MAY BE QUICKLY AND ACCURATELY POSITIONED ON THE FLAT (TOTAL TIME FOR A SIMPLE FLAT LAYOUT: 8 MINUTES).

A TAPE OF THIS MODULE IS AVAILABLE.

WORD GUIDE

P.S.S. - PRESS SIZE SHEET: SIZE OF SHEET ACTUALLY GOING THROUGH THE PRESS.

DISSOLVE - DISAPPEAR SLOWLY.

ACTINIC LIGHT - LIGHT RAYS WHICH CAUSE CHANGES IN THE PLATE EMULSION.

INFORMATION

IF THE IMAGE IS PROPERLY POSITIONED ON THE PLATE FOR THE PRESS SHEET, IT MAKES THE JOB FOR THE PRESS OPERATOR MUCH EASIER AND FASTER. ALL OFFSET PRESSES ARE BASED ON CENTER; THE PAPER IS ALWAYS CENTERED TO THE WIDTH OF THE PRINTING CYLINDERS AND FROM THE GRIPPER EDGE DOWN. THE IMAGE POSITION CAN BE CHANGED ON THE PRESS BUT WITH CARE, THE STRIPPER CAN RUN MOST JOBS SO THEY ARE IN EXACT POSITION ON THE FIRST PRINT. THE IMAGE IS PLACED IN THE PROPER POSITION ON THE PRESS SIZE SHEET AND THIS "P.S.S." IS EXACTLY CENTERED TO THE WIDTH OF THE CYLINDERS. THE PRESS USUALLY REQUIRES 1/2" OF THE PLATE TO HOLD IT. WE HAVE BOTH PIN-BAR (SMALL HOLES WHICH FIT ON SMALL PEGS) AND STRAIGHT-EDGE CLAMPS ON THE PRESSES. TO PERMIT SOME ADJUSTMENT, WE ALLOW A ONE INCH MARGIN FROM THE EDGE OF THE FLAT TO THE LEAD EDGE OF THE PRESS SHEET. ON THE SHEET ACTUALLY BEING PRINTED, WE MUST ALLOW A QUARTER OF AN INCH FOR THE SMALL OFFSET TO HOLD THE SHEET AS IT IS BEING PRINTED. THEREFORE, NO IMAGE AREA CAN BE PRINTED IN THE TOP 1/4" AS IT GOES THROUGH THE PRESS.

IT IS BEST TO USE A FINE BALL POINT PEN FOR DRAWING ALL LINES ON THE FLAT BECAUSE THEY WILL STAY CLEAN, SHARP, AND OPAQUE ON THE LIGHT TABLE. BE SURE ALL YOUR EQUIPMENT IS CLEAN AND DRY.

THE TWO MOST IMPORTANT LINES ON THE FLAT ARE THE LEAD EDGE LINE AND THE CENTER LINE. ONCE THESE ARE DRAWN ACCURATELY, ALL OTHER MEASUREMENTS ARE TAKEN FROM THESE TWO LINES ONLY.

IF A DROP OF WATER OR LIQUID GETS ON THE MASKING SHEET, IT WILL CAUSE THE DYE IN THE PAPER TO DISSOLVE AND FLOW TO THE OUTSIDE OF THE DROP. THIS WOULD PERMIT UNWANTED "ACTINIC" LIGHT TO EXPOSE THE PLATE IN THIS SPOT. USE THE 1/2" RED LITHO TAPE TO COVER SUCH A SPOT, IF THIS HAPPENS.

WE NORMALLY USE AN 80# DOUBLE-COATED GOLDENROD PAPER FOR OUR MASKING SHEETS. THIS ALLOWS NON-ACTINIC LIGHT TO PASS THROUGH SO THE IMAGE CAN BE SEEN IN STRIPPING, BUT THE SPECIAL DYE WILL NOT ALLOW ACTINIC LIGHT TO PASS AND THEN EXPOSE THE PLATE. FOR CRITICAL REGISTER WORK (AS USED IN COLOR PRINTING), PLASTIC GOLDENROD SHEETS ARE USED FOR MAXIMUM SHEET STABILITY. SOME STRIPPERS USE MASKING SHEETS WITH PRE-PRINTED MARKS AND MEASUREMENTS ON THEM FOR FAST LINE-UP. IF YOU HAVE A LOT OF JOBS WITH THE SAME POSITIONING, THE LINES MAY BE DRAWN ON THE LIGHT TABLE AND THE FLATS PLACED IN REGISTER OVER THESE LINES (DRAW YOUR LINES ON THIN PAPER OR PLASTIC

WORD GUIDE

F.T.S. - FINAL TRIM SIZE; THE FINISHED PIECE OF PAPER - THE SIZE THE CUSTOMER RECEIVES.

INFORMATION

OR LAY SCOTCH MAGIC TAPE ON THE GLASS AND DRAW ON THIS).

MANY JOBS WILL BE TRIMMED AFTER THEY ARE RUN. IF THE JOB IS RUN TWO OR MORE AT A TIME, THE TRIM SIZE WILL BE A DIFFERENT SIZE. THE SIZE RUN ON THE PRESS IS THE P.S.S. AND THE FINAL TRIMMED SIZE IS THE F.T.S. IN LAYING OUT THE FLAT, DRAW IN THE LINES FOR EACH OF THESE SO YOU CAN SEE EXACTLY WHERE TO PLACE THE NEGATIVE. FOR A GOOD PASTE-UP, PROVIDE THE IMAGE POSITION CENTERING LINES FOR THE CAMERA PERSON AND STRIPPER.

THE INSTRUCTIONS HERE APPLY TO OUR SMALL OFFSET DUPLICATORS ONLY. EVERY SHOP AND DEPARTMENT HAS SLIGHTLY DIFFERENT PROCEDURES. THESE ARE BASIC AND GENERALLY APPLY TO MOST SITUATIONS. LARGER PRESSES EMPLOY A VERY DIFFERENT METHOD OF POSITIONING ON THE FLAT.

WORD GUIDE

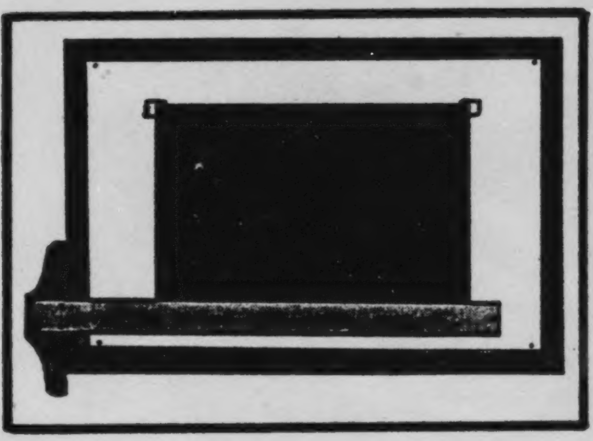
GOLDENROD - A GOLD-ORANGE COLOR; IN STRIPPING IT IS AN 80# DOUBLE-COATED PAPER USED TO BLOCK OUT LARGE AREAS AND SUPPORT NEGATIVES FOR PLATEMAKING (MASKING SHEET).

JOB STEPS

1. TAKE ALL EQUIPMENT & MATERIALS TO YOUR WORK AREA.

2. SELECT AND CLEAN A LIGHT TABLE WITH GLASS CLEANER.

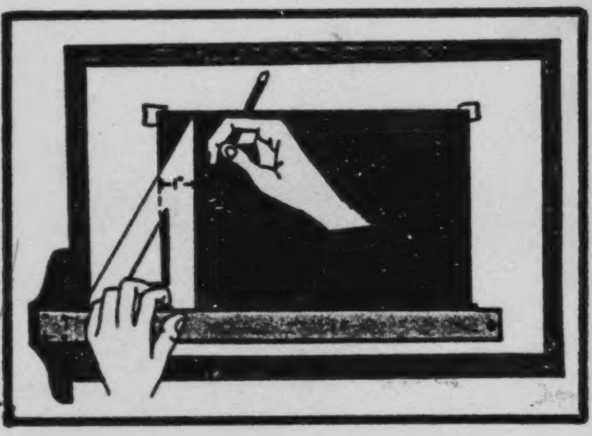
3. TAPE A 10" X 15 1/2" SHEET OF GOLDENROD MASKING PAPER TO THE LIGHT TABLE FOR YOUR STRIPPING FLAT.



NOTE: THE 15 1/2" DIMENSION SHOULD BE WIDTH-WISE ACROSS THE LIGHT TABLE AND SQUARED (USING A T-SQUARE) ACROSS THE BASE OF THE FLAT. WITH YOUR HAND, FLATTEN THE SHEET FROM THE CENTER OUT AND TAPE THE TOP CORNERS. THEN TAPE THE BOTTOM CORNERS (MAKE SURE THE GOLDENROD SHEET IS FLAT ON THE TABLE - NO BUCKLES).

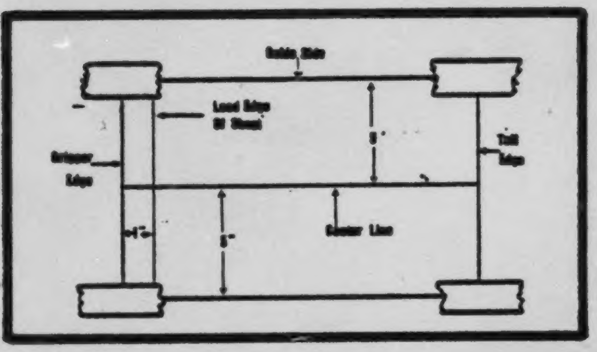
4. DOUBLE-CHECK TO MAKE SURE SHEET IS FLAT AND STRAIGHT ON LIGHT TABLE.

5. USING A T-SQUARE AND EDGE OF LIGHT TABLE NEAREST TO YOU, DRAW A FINE, BALL-POINT LINE EXACTLY ONE INCH FROM THE GRIPPER EDGE (SEE ILLUSTRATION).



NOTE: THE T-SQUARE SHOULD BE ON THE "GUIDE SIDE", AWAY FROM THE STRIPPER FOR PRESSES 11" X 17" OR SMALLER.

6. DRAW THE CENTER LINE ACROSS THE 15 1/2" DIRECTION OF THE FLAT. THE CENTER LINE MUST BE 5" FROM THE GUIDE SIDE AND 5" FROM THE STRAIGHT EDGE SIDE NEAREST YOU.



WORD GUIDE

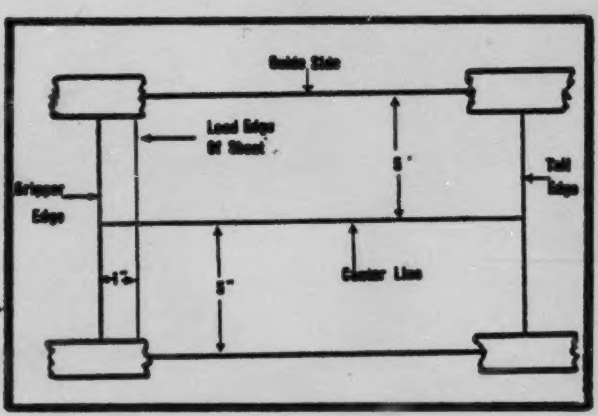
GRIPPER EDGE - THE SIDE (OR LEAD EDGE) WHICH GOES THROUGH THE PRESS FIRST, AND IS THE EDGE HELD BY THE PRESS GRIPPERS AS IT GOES THROUGH.

GUIDE SIDE - THE SIDE THE PRESS USES TO GUIDE THE SHEET TO THE EXACT SIDE POSITION USUALLY THE SIDE TOWARD THE OPERATOR (ALSO KNOWN AS OPERATOR OR CONTROL SIDE).

JOB STEPS

7. DOUBLE-CHECK YOUR POSITION OF LINES FOR ACCURACY. YOUR MASKING SHEET SHOULD NOW LOOK LIKE THE DRAWING.

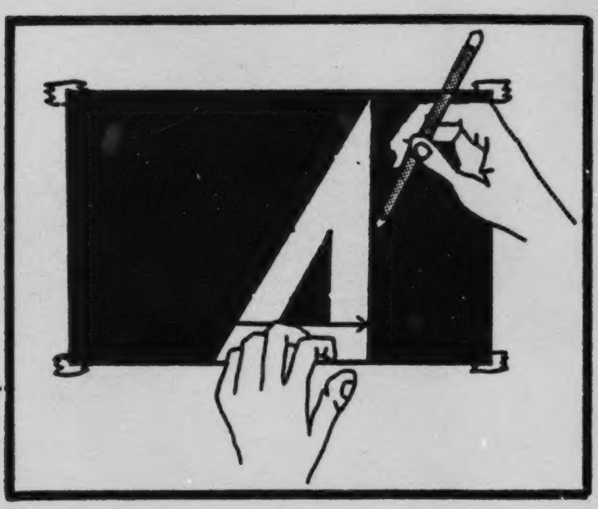
NOTE: THE CENTER LINE IS IMPORTANT, AS ALL OFFSET PRESSES ARE BASED ON CENTER. ALL PARTS AND ADJUSTMENTS ARE EXACTLY SYMMETRICAL TO THE CENTER OF THE OFFSET PRESS. THE GUIDE SIDE IS ALSO KNOWN AS THE OPERATOR'S SIDE WHERE THE CONTROLS ARE LOCATED. ALL JOBS THAT YOU STRIP-UP FOR OFFSET LITHOGRAPHY MUST LOOK EXACTLY LIKE THIS, WITH A LEAD EDGE OF SHEET LINE AND A CENTER LINE DRAWN ON THE FLAT.



8. NOW, DRAW THE 5" X 8" PRESS SHEET SIZE ON THE MASKING SHEET (FOLLOW EACH STEP BELOW).

NOTE: THOUGH METAL PLATES ARE EXACTLY CORRECT SIZE, MASKING SHEETS ARE USUALLY SLIGHTLY LARGER THAN NEEDED.

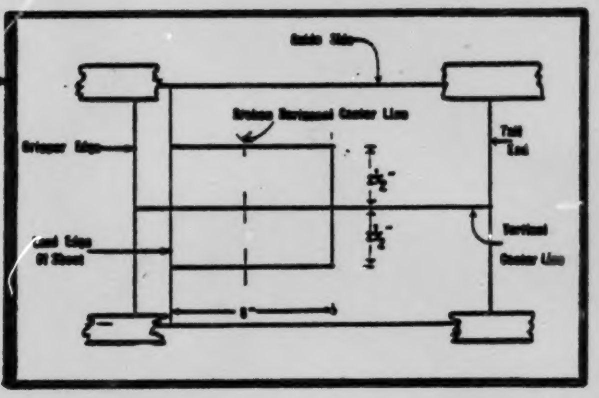
9. FROM THE LEAD EDGE OF SHEET LINE, MEASURE 8" DOWN TOWARD THE TAIL OF THE MASKING SHEET AND DRAW A LINE (SEE ILLUSTRATION).



NOTE: ALL LINES REPRESENTING PRESS SHEET SIZE SHOULD GO 1/2" TO 1" BEYOND THE LINE IT INTERSECTS SO IT WILL BE VISIBLE, IN CASE THE NEGATIVE COVERS THE SHEET SIZE LINES.

JOB STEPS

10. FROM THE CENTER LINE, PUT A MARK 2 1/2" ABOVE AND BELOW IT AND DRAW YOUR LINES FROM THE LEAD EDGE TO THE 8" LINE YOU JUST DREW.



11. DRAW A BROKEN LINE 1/2 THE DISTANCE FROM THE LEAD EDGE OF SHEET (IN THIS CASE 4") TO ESTABLISH THE HORIZONTAL CENTER LINE (THE CENTER LINE ON THE MASKING SHEET WILL SERVE AS THE VERTICAL CENTER LINE FOR THE PRESS SIZE SHEET - P.S.S.).

12. REMOVE MASKING SHEET FROM TABLE. USE YOUR FINGERNAIL UNDER CORNER OF MASKING TAPE THAT IS ON GOLDENROD FLAT. SLOWLY AND EASILY LIFT IT UP AND PULL AWAY AT THE SAME TIME TO PREVENT TEARING GOLDENROD SHEET. THE FLAT IS READY TO HAVE A NEGATIVE STRIPPED TO IT.

13. SAVE THIS FLAT AND USE IT TO STRIP IN A 4" X 5" NEGATIVE AS REQUIRED FOR MOD #1401 11 003 WHICH IS THE NEXT ONE YOU WILL DO.

14. RETURN YOUR TOOLS, THROW AWAY THE TAPE AND CLEAN THE LIGHT TABLE, IF NECESSARY.

CHECK LIST FOR BASIC STRIPPING

1. IS MY TABLE CLEAN AND CLEAR?
2. ARE MY TOOLS AND MATERIALS CLEAN AND READY?
3. IS THE FLAT PROPERLY SECURED AND STRAIGHT?
4. ARE THE LEAD EDGE LINE AND THE CENTERING LINE CORRECT?
5. HAVE I PROPERLY POSITIONED THE P.S.S. AND F.T.S. LINES?
6. ARE THE CENTERING OR REGISTER MARKS EXACT?
7. HAVE I DOUBLE CHECKED MYSELF?

SINCE OTHERS IN THIS AND OTHER CLASSES MAY BE DOING EXACTLY THE SAME MODS, PRINT YOUR NAME (USUALLY UPPER RIGHT CORNER) ON YOUR WORK. THERE IS USUALLY ROOM TO INCLUDE YOUR NAME ON ANY CAMERA COPY SO IT WILL ALSO APPEAR ON YOUR NEGATIVE.

SELF QUIZ

ANSWER THE FOLLOWING 10 QUESTIONS YOURSELF. WRITE THE ANSWERS ON A SEPARATE SHEET OF SCRAP PAPER. THEN GO BACK THROUGH THE INSTRUCTIONS TO CHECK YOURSELF - CORRECTING ANY WRONG ANSWERS. THE CORRECT ANSWERS ARE ON PAGE 10 OF THIS MOD. SCORE TWO POINTS IF YOUR FIRST ANSWER WAS CORRECT, ONE POINT IF CORRECTED FROM THE MOD INSTRUCTIONS. YOU SHOULD SCORE AT LEAST 85% (MULTIPLY THE TOTAL POINTS BY 5 TO OBTAIN THE PERCENTAGE).

1. WITH THE SMALL 10 X 15 1/2" GOLDENROD MASKING SHEET TAPED ON THE LIGHT TABLE BEFORE YOU, WHAT IS THE PROPER NAME OF THE SIDE TO YOUR LEFT? ____________________
2. AS IN QUESTION #1, WHICH SIDE IS AWAY FROM YOU? ____________________
3. WHY IS A FINE, BALL-POINT PEN PREFERRED IN MARKING A MASKING SHEET? ____________________
4. WHY IS THE CENTER LINE SO IMPORTANT? ____________________
5. WHAT IS THE NAME OF THE LIGHT THAT EXPOSES THE PLATES? ____________________
6. BRIEFLY, WHAT IS THE RULE FOR REMOVING MASKING TAPE? ____________________
7. WHAT DOES WATER OR GUM DO TO THE MASKING SHEET? ____________________
8. IN A FOUR-COLOR PROCESS REGISTER JOB, WHAT TYPE OF MASKING SHEET SHOULD WE USE? ____________________
9. WHAT KIND OF TAPE PREVENTS UNWANTED LIGHT FROM EXPOSING THE PLATE? ____________________
10. IN STRIPPING, WHY ARE METAL RULERS AND ANGLES PREFERRED? ____________________

TO CHECK YOUR ANSWERS, FOLD THIS SHEET BACK AND THE ANSWERS WILL BE ON THE BACK OF THIS SHEET.

ANSWER SHEET

1. GRIPPER
2. GUIDE
3. THIN, CLEAN LINE
4. ALL OFFSET PRESSES ARE BASED ON THE EXACT CENTER.
5. ACTINIC
6. TURN THE CORNER OF THE TAPE BACK 180° AND GENTLY PULL IN A DIRECTION OFF THE PAPER, KEEPING THE TAPE (FINGERS) LOW.
7. DISSOLVES THE DYE, PERMITTING LIGHT TO PASS.
8. PLASTIC
9. RED LITHO TAPE.
10. HOLD TRUE SIZE AND SHAPE, LESS CHANCE OF DAMAGE, AND CAN USE A RAZOR BLADE WITH METAL.

graphics

unit: STRIPPING

capital area career center

module: 1401 11 003
1401 11 003 3 **date:** JUNE 1977 **level:**

skill title: BASIC PROCEDURE FOR "STRIPPING-IN NEGATIVES"

developed & written by: GLEN PETTIT AND DWIGHT HORNER

visuals by: CYNTHIA ALDERSON

WORD GUIDE

NEGATIVE - PHOTOGRAPHIC IMAGE ON PLASTIC FILM IN WHICH THE BLACK COPY (IMAGE) IS CLEAR AND THE WHITE OR PAPER IS OPAQUE (BLACK).

OPAQUE - A RED OR BLACK LIQUID USED TO BLOCK OUT OR COVER UNWANTED CLEAR OR GRAY AREAS ON A NEGATIVE.

PERFORMANCE OBJECTIVE

YOU ARE GOING TO LEARN:

HOW TO LOCATE THE CENTERLINES ON AN UNMARKED NEGATIVE, CENTER THIS NEGATIVE ON A FLAT LAYOUT, THEN TAPE, CUT OUT THE WINDOWS AND OPAQUE THE COMPLETED FLAT.

AND IN ORDER TO DO THIS YOU WILL NEED:

- A LIGHT TABLE
- LINE GAUGE
- TRIANGLE
- RAZOR BLADE
- X-ACTO KNIFE
- SCISSORS
- PAPER PUNCH
- T-SQUARE
- OPAQUING BRUSH
- MASKING SHEET
- RED LITHO TAPE
- MASKING TAPE
- GLASS CLEANER

WE WILL KNOW YOU CAN DO IT WHEN:

1. THE NEGATIVE HAS THE IMAGE CENTER REFERENCE MARKS EXACTLY SCRIBED SO IT CAN QUICKLY AND EASILY BE PLACED IN THE PROPER POSITION ON A MARKED FLAT.
2. THE NEGATIVE IS SECURELY TAPED, THE WINDOWS CUT CLEAN AND ALL PIN-HOLES OPAQUED.

   (TOTAL TIME FOR STRIPPING IN AND OPAQUING A SIMPLE LINE NEGATIVE: 10 MINUTES.)

A TAPE OF THIS MODULE IS AVAILABLE.

WORD GUIDE

DIAGONALLY - DIRECTION GOING ACROSS A STRAIGHT LINE, IN STRIPPING MEANING ACROSS THE CORNER AT 45° AS OPPOSED TO THE SAME DIRECTION AS THE EDGES.

EMULSION - COATING OF A PHOTOGRAPHIC MATERIAL THAT IS SENSITIVE TO LIGHT. IT IS USUALLY MADE OF SILVER SALTS SUSPENDED IN GELATIN, AND IS USUALLY ON A PLASTIC PAPER OR METAL BASE FOR SUPPORT.

FLARE - NON-IMAGE LIGHT WHICH REACHES A PHOTOGRAPHIC EMULSION DURING EXPOSURE, CAUSING A THICKNESS OR BOLD IMAGE.

INFORMATION

CAMERA COPY WITH IMAGE CENTER REFERENCE MARKS MAKES STRIPPING NEGATIVES MUCH EASIER. IT IS OFTEN NECESSARY FOR THE STRIPPER TO LOCATE THESE, AND THEY MUST BE ACCURATE. SO, ALWAYS DOUBLE-CHECK YOURSELF. WITH THE NEGATIVE TAPED SQUARELY ON THE LIGHT TABLE, EMULSION UP (WRONG READING), YOU CAN FIND THE OUTSIDE IMAGE MARGIN. DRAW PARALLEL LINES WITH A SOFT PENCIL TO MARK. HALFWAY BETWEEN THESE IS CENTER. A QUICK TRICK IS TO LAY THE RULER DIAGONALLY UNTIL THE TWO PARALLEL LINES ARE ON EVEN INCHES, THEN HALF THIS TO FIND CENTER. ALWAYS USE METAL WHEN SCRATCHING WITH A RAZOR BLADE OR X-ACTO KNIFE.

YOU NEED ONLY 1/2" TO 1" (1 TO 3 CM) EXCESS NEGATIVE BEYOND THE IMAGE AREA. ANY MORE IS UNNECESSARY AND SHOULD BE TRIMMED OFF. THE SCISSORS OR A RAZOR BLADE IS BEST FOR TRIMMING. DO NOT USE THE X-ACTO KNIFE, AS IT DULLS EASILY.

TRY TO KEEP SCRATCHED REFERENCE MARKS AT LEAST 1/4" (6 MM) AWAY FROM THE IMAGE AREA.

THE EMULSION SIDE OF A NEGATIVE USUALLY HAS A ROUGH TEXTURE, SHOULD BE "WRONG READING", WILL SCRATCH AND WILL TEMPORARILY STICK TO A MOIST FINGER. TO REDUCE THE CHANCE OF SCRATCHING, ALWAYS WORK WITH FILM OR NEGATIVES WITH THE EMULSION UP.

WHEN TAPING NEGATIVES, REMEMBER THAT THE CORNERS ARE VERY IMPORTANT AS THEY MAY CATCH AND TEAR IN HANDLING. MAKE SURE THAT ALL FOUR CORNERS OF THE NEGATIVE ARE SECURELY TAPED. ANY TAPE MORE THAN 1/4" (6 MM) AWAY FROM THE NEGATIVE DOESN'T REALLY HELP HOLD, AND IS WASTED. TRY AND USE MOSTLY ONE INCH PIECES OF TAPE (A LITTLE WIDER THAN YOUR FINGER) AND THERE SHOULD BE A PIECE OF RED LITHO TAPE EVERY 5 - 6" (10 - 15 CM) ON THE NEGATIVE EDGES (FLATS WILL GET MUCH ROUGHER HANDLING HERE THAN IN INDUSTRY - SOME STRIPPERS USE ONLY TWO PIECES OF TAPE TO HOLD THE NEGATIVE TO THE MASKING SHEET). ANY TAPE WITHIN 1/8" (3 MM) OF THE IMAGE ON THE EMULSION SIDE MAY CAUSE "FLARE" OR IMAGE SPREAD DURING EXPOSURE.

WORD GUIDE

WINDOWS - OPEN OR CLEAR AREA WHICH PERMITS LIGHT TO PASS THROUGH, USUALLY LARGE AREAS ON A NEGATIVE OR A HAND-CUT OPENING ON A MASKING SHEET SO THE IMAGE MAY BE EXPOSED.

INFORMATION

IT IS BEST TO OPAQUE ON THE BASE SIDE OF THE NEGATIVE (RIGHT READING), AS ANY ERRORS OR EXCESS OPAQUE CAN EASILY BE SCRAPED OFF WITH A KNIFE OR WIPED OFF WITH A MOIST RAG. EITHER CORRECTION IS DIFFICULT ON THE SOFT EMULSION SIDE. ALWAYS GENTLY BRUSH THE OPAQUE ON THE BASE SIDE; DO NOT "DAB". IN THE PRINTING INDUSTRY, MANY STRIPPERS DO OPAQUE ON THE EMULSION BECAUSE IT DOES DRY FASTER.

IN CUTTING WINDOWS, YOU WANT TO CUT THROUGH THE MASKING SHEET BUT NOT INTO THE NEGATIVE. IT TAKES SOME SKILL, SO PRACTICE FIRST ON SOME SCRAP. SOME STRIPPERS HOLD THE RAZOR BLADE SO IT CUTS THE MASKING ON AN ANGLE. IN CASE THEY DO GO THROUGH THE NEGATIVE TOO, THE AMOUNT OF UNWANTED LIGHT WILL BE MINIMAL. ALWAYS USE A SHARP (OR RESHARPENED) RAZOR BLADE WHEN CUTTING WINDOWS AND STAY ABOUT 3 - 6 MM AWAY FROM THE IMAGE AREA. IF YOU DO CUT THROUGH THE NEGATIVE WHEN CUTTING WINDOWS, YOU WILL HAVE ENOUGH ROOM TO COVER THE SLIT WITH RED LITHO TAPE. ON THE BASE SIDE, THE TAPE MAY COME RIGHT UP TO THE IMAGE. ON LINE NEGATIVES, THE MAGIC TAPE MAY COVER THE IMAGE (IF NECESSARY) BUT IT SHOULD NOT EVER COVER HALFTONES.

WHEN FINISHED CUTTING AND OPAQUING, CHECK THE FLAT OVER VERY CAREFULLY FOR DUST AND DIRT. WIPE OFF FRAYED EDGES OF THE WINDOW OR ANY EXCESS OPAQUE WITH SOFT CLOTH OR BRUSH. BY MAKING A TUBE WITH YOUR HANDS, YOU CAN CLOSE-CHECK PINHOLES TO BE OPAQUED.

YOU CAN CHECK A BAD NEGATIVE BY EXAMINING THE GRAY SCALE OR EXPOSURE GUIDE (IT SHOULD BE A 3.5 OR A NEARLY SOLID "A"). IF YOU GET A BAD NEGATIVE, ASK THE CAMERA OPERATOR WHY. SOMETIMES IT IS NECESSARY TO UNDEREXPOSE OR UNDERDEVELOP TO SOME WEAK COPY. DON'T LET THE CAMERA OPERATOR EXPOSE UNNECESSARY WORK FOR YOU. ONE OR TWO MINUTES SHOULD BE THE MAXIMUM OPAQUING TIME PER NEGATIVE.

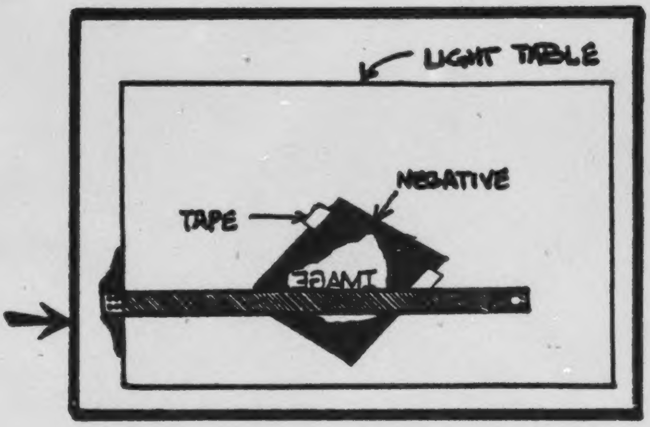
AVOID SCRATCHING REFERENCE MARKS TOO DEEPLY. THE EMULSION IS ACTUALLY ONLY ABOUT 15% OF THE NEGATIVE OR FILM THICKNESS. AVOID OVER-LAPPING NEGATIVES OR SEVERAL LAYERS OF TAPE. THIS MAY RESULT IN UNDESIRED IMAGE FLARE. MAGIC TAPE MAY BE USED INSTEAD OF RED LITHO TAPE FOR HOLDING THE NEGATIVE TO THE FLAT. BUT IT IS HARDER TO SEE WHERE YOU TAPED.

WORD GUIDE

HORIZONTAL - DIMENSION OF A PLANE THAT EXTENDS PARALLEL TO THE HORIZON. THE HORIZONTAL (OR CONTROLLING DIMENSION) REPRESENTS THE WIDTH OF AN IMAGE.

JOB STEPS

1. TAKE ALL EQUIPMENT AND MATERIALS TO YOUR WORK AREA.
2. SELECT AND CLEAN A LIGHT TABLE WITH GLASS CLEANER.
3. SELECT A CARTOON OR DRAWING (OR MAKE ONE YOURSELF) THAT IS ABOUT 3" (8 CM) IN DIAMETER.
4. HAVE SOMEONE IN THE CAMERA UNIT SHOOT THIS FOR YOU - THE MAXIMUM IMAGE AREA SHOULD NOT EXCEED 3 X 4" (8 X 10CM).
5. TAPE THE 4" X 5" NEGATIVE TO THE LIGHT TABLE, EMULSION SIDE UP (APPROXIMATELY A 3" DIAMETER LINE ART IMAGE). SEE NOTE AND ILLUSTRATION FOR TAPING NEGATIVE IMAGE STRAIGHT ON TABLE.



NOTE: TWO SHORT PIECES OF MASKING TAPE ON OPPOSITE SIDES IS ADEQUATE. THE IMAGE MUST BE STRAIGHT WITH T-SQUARE.

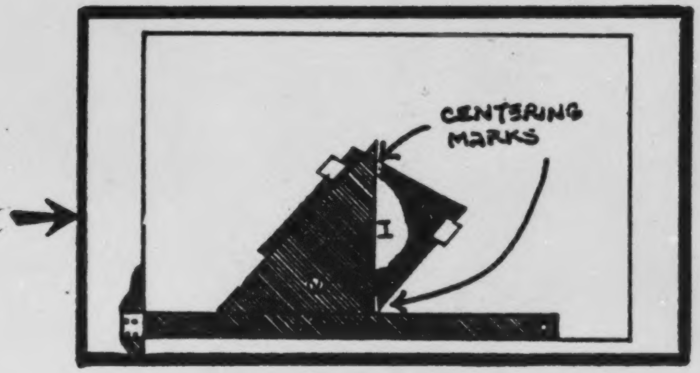
WORD GUIDE

VERTICAL - DISTANCE BETWEEN THE TOP AND BOTTOM OF AN IMAGE WHEN IT IS HELD IN AN UPRIGHT (READING) POSITION. THE VERTICAL DIMENSION IS ALSO KNOWN AS THE HEIGHT AND IS PERPENDICULAR TO THE HORIZONTAL.

JOB STEPS

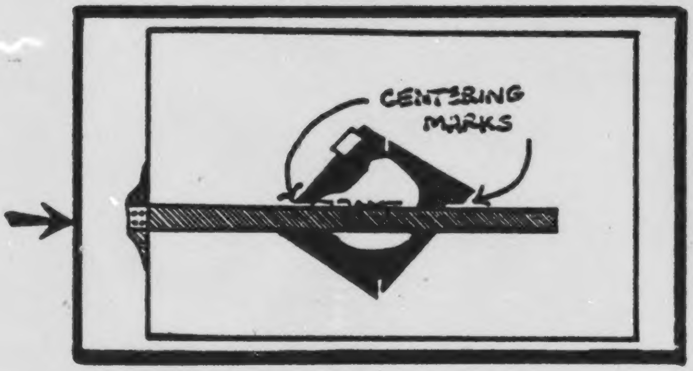
6. LOCATE THE CENTER OF THE IMAGE HORIZONTALLY WITH A RULER.

7. USING A T-SQUARE TRIANGLE, BRING THE TRIANGLE TO THE CENTER POINT AND SCRATCH A CENTERING IMAGE MARK (REFERENCE LINE) WITH AN X-ACTO KNIFE OR A RAZOR BLADE ON EACH END, GOING OFF THE NEGATIVE (SEE ILLUSTRATION). BE SURE TO STAY AT LEAST 5 MM FROM THE IMAGE.



NOTE: THE T-SQUARE SHOULD BE ON THE "GUIDE SIDE" AWAY FROM THE STRIPPER FOR PRESSES 11 X 17" OR SMALLER.

8. LOCATE THE VERTICAL CENTER THE SAME WAY EXCEPT: ELIMINATE THE TRIANGLE AND MOVE THE T-SQUARE UP TO THE CENTER POINT OF THE IMAGE AND SCRATCH YOUR CENTER MARKS ON THE EDGE OF THE NEGATIVE. DOUBLE-CHECK TO BE SURE YOU HAVE THE EXACT CENTER OF IMAGE BOTH HORIZONTALLY AND VERTICALLY.



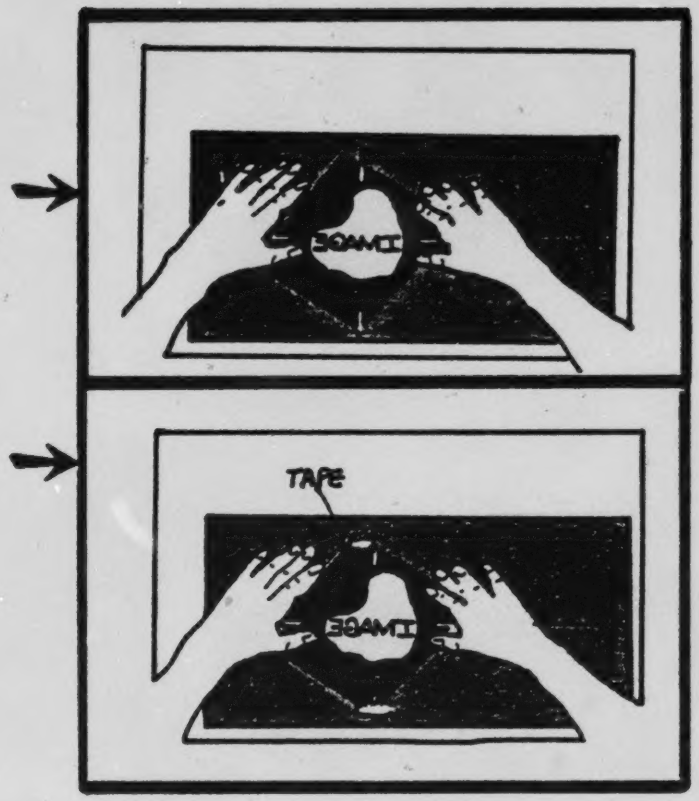
JOB STEPS

9. REMOVE THE MARKED NEGATIVE AND PLACE IT ON THE LAYOUT FLAT, WRONG READING SIDE UP (THIS IS THE FLAT FROM MOD 1401 11 002).

10. LINE UP THE CENTER MARKS ON EACH OF THE FOUR SIDES OF THE NEGATIVE EXACTLY WITH EACH OF THE TWO CENTERING LINES DRAWN ON THE LAYOUT FLAT (GOLDENROD MASK).

11. HOLD NEGATIVE IN POSITION WITH ONE HAND AND APPLY A PIECE OF 1/4" RED LITHO TAPE ON TWO CORNERS (SEE ILLUSTRATION).

    NOTE: MAKE SURE NEGATIVE IS FLAT ON MASKING SHEET FROM CENTER OUT AS YOU APPLY EACH PIECE OF TAPE. DO NOT PUT TAPE ON DIAGONALLY ACROSS CORNERS.

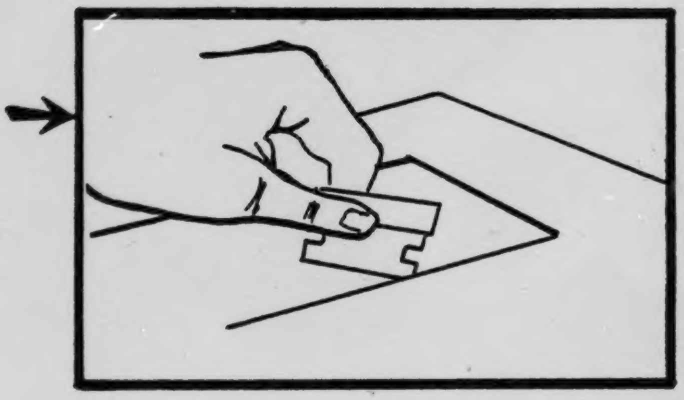


12. AFTER APPLYING TWO PIECES OF TAPE, DOUBLE-CHECK YOUR CENTER MARKS. THEN, TAPE THE LAST TWO CORNERS.

13. TURN OVER THE ENTIRE FLAT ON A CLEAN LIGHT TABLE.

JOB STEPS

14. WITH THE LIGHT ON IN THE TABLE, START CUTTING THE WINDOW OUT OF THE MASKING SHEET WITH A RAZOR BLADE.



****

CAUTION: CUT THROUGH MASKING SHEET ONLY. STAY ABOUT 3 MM (1/8") AWAY FROM THE IMAGE. DO NOT CUT THROUGH THE NEGATIVE.

****

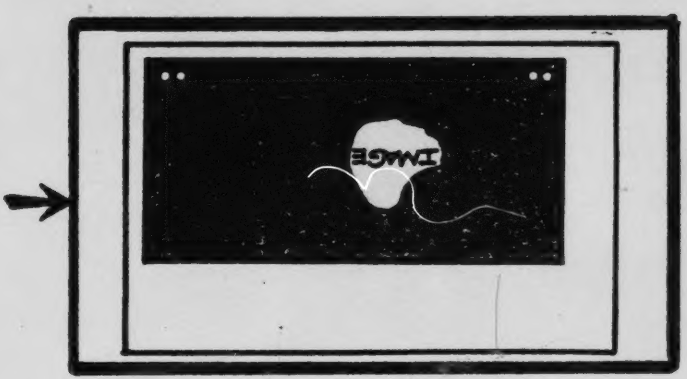
NOTE: METAL PLATES ARE EXACTLY CORRECT SIZES BUT MASKING PLATES ARE USUALLY LARGER.

15. SCAN THE ENTIRE OPEN WINDOW FOR FRAYED PAPER COVERING THE IMAGE, DIRT COVERING IMAGE AREAS, OR SCRATCHES AND PIN-HOLES WHICH MAY ALLOW LIGHT TO COME THROUGH.

16. TRIM MASKING SHEET WHERE NECESSARY, CLEAN DIRTY IMAGE AREAS ON NEGATIVE, AND OPAQUE PIN HOLES AND SCRATCHES IN NEGATIVE WITH BLACK OPAQUE BY BRUSHING IT (DON'T "DAB") IN THIN LAYERS.

NOTE: A GOOD NEGATIVE SHOULD NOT NEED ANY OPAQUING IF THE COPYBOARD GLASS AND FILM WAS CLEAR AND PROCESSED CAREFULLY.

JOB STEPS



17. CHECK NEGATIVE TO MAKE SURE NO IMAGE AREAS WERE ACCIDENTALLY COVERED BY OPAQUE. IF YOU NEED TO CLEAN OFF ANY OPAQUE FROM IMAGE AREA, USE A DAMP SHOP TOWEL AND WIPE IT OFF.

18. USING THE 1/4" HAND PUNCH, PUNCH A DOUBLE HOLE ABOUT 2" IN FROM THE GRIPPER AND TAIL ENDS ON THE GUIDE SIDE.

19. COVER THESE TWO DOUBLE HOLES WITH 1/2" RED LITHO TAPE. THE HOLES WILL BE THE TEMPORARY TACKING POINTS TO HOLD THE FLAT TO THE PLATE ON THE PLATEMAKER AS THE AIR IS VACUUMED OUT.

20. THE STRIPPING FLAT IS COMPLETE AND READY FOR PLATEMAKING, WHICH WILL BE YOUR NEXT PROJECT AS YOU PROCEED WITH MOD 1401 12 003, "EXPOSING AND PROCESSING A SIMPLE ADDITATIVE OFFSET PLATE".

21. CLEAN ALL YOUR TOOLS (WASH THE BRUSH WITH WATER) AND EQUIPMENT (USE GLASS CLEANER) BEFORE GOING TO THE PLATEMAKING AREA.

SELF QUIZ

ANSWER THE FOLLOWING 10 QUESTIONS YOURSELF. THEN GO BACK THROUGH THE INSTRUCTIONS TO CHECK YOURSELF - - CORRECTING ANY WRONG ANSWERS.

DO NOT WRITE ON THIS PAGE. USE A SEPARATE SHEET OF PAPER.

1. WHY SHOULD THE REFERENCE LINES GO OFF THE EDGE OF THE NEGATIVE? ____________________

2. WHY IS IT IMPORTANT TO KEEP THE IMAGE (WRONG-READING) SIDE UP WHEN WORKING WITH NEGATIVES? ____________________

3. WHAT WOULD PIN HOLES DO IF LEFT IN THE NEGATIVE? ____________________

4. WHAT CAUSES PIN HOLES? ____________________

5. WHY USE 1/2" RED LITHO TAPE INSTEAD OF 1/4" ON THE TACKING HOLES? ____________________

6. IT'S A GOOD IDEA TO COVER THE OPAQUE JAR AND WASH THE BRUSH IMMEDIATELY AFTER USE. WHY? ____________________

7. GIVE TWO GOOD REASONS FOR NOT PLACING TAPE EVERY 2" TO HOLD THE NEGATIVE TO THE FLAT. ____________________

8. IN OPAQUING, IF YOU OPAQUED TOO CLOSE TO THE IMAGE ON THE EMULSION SIDE, WHAT MAY HAPPEN? ____________________

9. WHY DO WE SUGGEST A PIECE OF TAPE IN EACH CORNER IN STRIPPING? ____________________

10. GIVE THREE METHODS FOR DETERMINING THE BASE SIDE OF A NEGATIVE. ____________________

ANSWER SHEET

1. TO SEE THE LINE EASIER WHEN REGISTERING A NEGATIVE ON THE MASKING SHEET.

2. MAY SCRATCH EMULSION IF IT WAS DOWN.

3. ALLOW LIGHT TO EXPOSE PLATE IN AN UNDESIRED AREA.

4. DUST AND DIRT ON FILM, COPYBOARD GLASS, COPY OR IN THE DEVELOPER TRAY.

5. 1/4" TAPE MAY NOT COMPLETELY COVER THE 1/4" HOLES.

6. AVOID DRYING, EASIER TO WASH WHEN STILL WET.

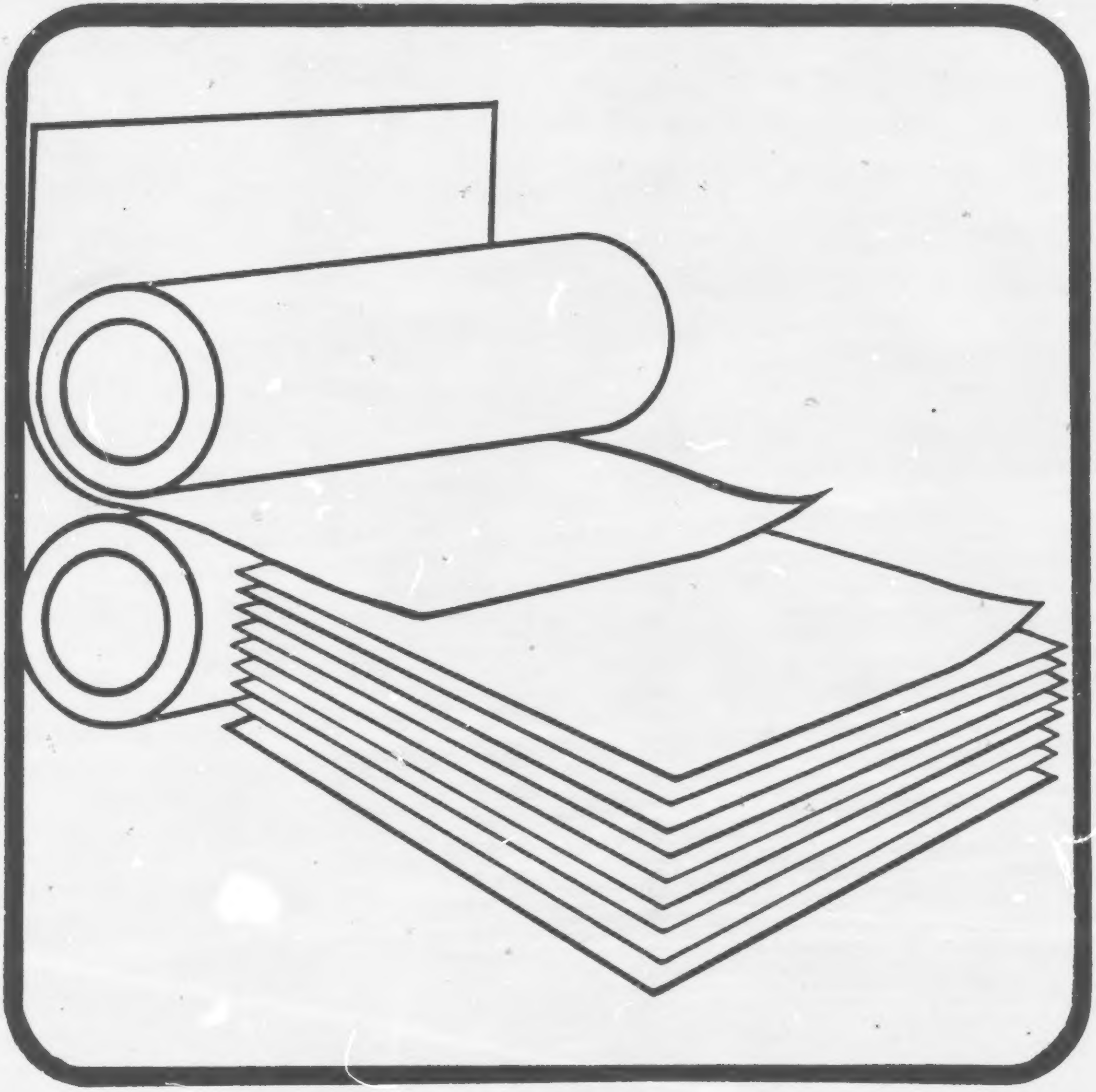
7. (1) WASTES TAPE
   (2) WASTES TIME
   (3) UNNECESSARY

8. MAY NOT GET COMPLETELY FLAT CONTACT IN EXPOSURE, CAUSING FLAIR. IT IS VERY DIFFICULT TO CORRECT ANY ERRORS.

9. SAFETY - - IN CASE OF ROUGH OR CARELESS HANDLING THE OPEN CORNERS MAY CATCH AND TEAR.

10. (1) WILL NOT CLEAR IF SCRATCHED
    (2) SHINEY, BRIGHTER THAN THE EMULSION SIDE
    (3) SMOOTH TO THE TOUCH
    (4) IT IS RIGHT READING
    (5) WILL NOT STICK TO MOIST TONGUE OR FINGER

3.



graphics

unit: STRIPPING

capital area career center

module: 1401 11 004 3 date: JUNE 1977 level:

1401 11 004

skill title: SIMPLE IMPOSITION FOR STRIPPING TWO NEGATIVES IN REGISTER

developed & written by: GLEN PETTIT AND DWIGHT HORNER

visuals by: BRUCE BENNETT

WORD GUIDE

SILVERPRINT - A BROWNPRINT PAPER EXPOSED THROUGH THE NEGATIVE FLAT, DEVELOPED IN WATER, FIXED, WASHED AND DRIED - GIVES A QUICK, SIMPLE AND CHEAP PROOF OF A STRIPPED FLAT.

PERFORMANCE OBJECTIVE

YOU ARE GOING TO LEARN:

HOW TO POSITION TWO FORMS FOR THE P.S.S. ON A FLAT EXACTLY CENTERED IN THEIR F.T.S. POSITION, WITH PROPER TRIMMING AND OPAQUING.

AND IN ORDER TO DO THIS YOU WILL NEED:

- A LIGHT TABLE (GEAR TRACK)
- LINE GAUGE
- TRIANGLE
- BALLPOINT PEN
- RAZOR BLADE
- SCISSORS
- PUNCH
- OPAQUE BRUSH
- 10" X 15" MASKING SHEET*
- TAPE (RED AND MASKING)
- NEGATIVES (TWO FORMS)
- SILVERPRINT PAPER 8 1/2" X 11"
- OPAQUE
- GLASS CLEANER

*NOTE: 8 1/2" X 11" MASKING SHEETS MAY BE AVAILABLE, TOO.

WE WILL KNOW YOU CAN DO IT WHEN:

1. ALL GUIDE LINES (P.S.S. LINES AND F.T.S. LINES) ARE EXACTLY POSITIONED AND DRAWN SO THAT THE REFERENCED NEGATIVES MAY BE QUICKLY AND EXACTLY REGISTERED IN POSITION.
2. THE NEGATIVES ARE OPAQUED CLEAN *(TOTAL AVERAGE TIME FOR THIS TYPE OF JOB: 45 MINUTES - SEE INFORMATION PAGE).

A TAPE OF THIS MODULE IS AVAILABLE.

WORD GUIDE

IMAGE - DESIRED AREAS OF A NEGATIVE; THE PART THAT SHOULD PRINT (IT DOES NOT INCLUDE THE EXPOSURE GUIDE OR REFERENCE MARK).

REFERENCE MARKS - IMAGE CENTERING MARKS, MARGIN LINES, TRIM MARKS, FOLD MARKS, ARE CALLED REFERENCE MARKS. THEY ARE USED TO INDICATE SOMETHING AND ARE USUALLY LOCATED OUTSIDE THE F.T.S.

INFORMATION	MATERIALS	LOCATION OF MATERIALS
*TOTAL AVERAGE TIME IS HOW LONG IT SHOULD TAKE YOU WHEN WORKING IN THE INDUSTRY. AS A BEGINNING EMPLOYEE IN STRIPPING, WHO HAS COMPLETED THIS COURSE AT CACC, YOU WOULD BE EXPECTED TO COMPLETE THIS JOB IN APPROXIMATELY 45-50 MINUTES, THE FIRST TIME YOU WORK ON THIS MOD, YOU MAY TAKE THREE TIMES THIS LONG. THE SECOND TIME YOU MAY TAKE TWICE THIS TIME. ALL THESE MODS ARE IN SEQUENCE. ONE BUILDS FROM THE ONE BEFORE IT AND YOUR ARE EXPECTED TO RETAIN ALL NEW KNOWLEDGE AND SKILLS. IF YOU ARE NOT SATISFIED WITH YOUR WORK, REPEAT THE MOD. YOU DO NOT HAVE TO MEET THE REQUIRED STANDARDS THIS TIME, BUT SHOULD BE CAPABLE OF MEETING IT OR GETTING VERY CLOSE.	10 X 15" MASKING TAPE TAPE (RED AND MASKING) OPAQUE	TOP SHELF, GEAR TRACK REGISTER LIGHT TABLE TAPE DISPENSERS, MOST NEAR THE LIGHT TABLES BLACK OPAQUE IS IN ALL THE LIGHT TABLE DRAWERS.
FOR MOST JOBS, THE LONGEST SHEET SIZE RUNS THE LENGTH OF THE PRESS (SHAPE OF THE PAPER TO THE SHAPE OF THE PLATE). THE P.S.S. IS ALWAYS CENTERED ON THE CYLINDERS FROM THE GRIPPING EDGE. WE USE ONE INCH DOWN ON THE FLAT, EXCEPT FOR MAXIMUM-SIZE IMGAE AREAS. ALL OFFSET PRESSES ARE BASED ON CENTER. FOR MOST PRESSES, THE PAPER GRIPPERS REQUIRE ABOUT 1/4" TO HOLD THE SHEET, SO NO IMAGE CAN APPEAR HERE.	NEGATIVES	FLAT STORAGE CABINET #2, DRAWER #4 SEE

WORD GUIDE

FOUR SIDED TRIM - AFTER THE JOB IS PRINTED, A TRIM WILL BE TAKEN OFF OF ALL FOUR SIDES TO REMOVE ANY REFERENCE OR REGISTRATION MARKS AND LEND A NICE CLEAN EDGE TO THE PILE OF SHEETS.

CHOP-CUT - ONE CUT BETWEEN TWO FORMS WITHOUT TRIMMING ANY EXTRA PAPER AWAY TO ACQUIRE THE F.T.S.

INFORMATION	MATERIALS	LOCATION OF MATERIALS
IN STARTING TO LEARN STRIPPING, IT IS BEST TO COMPLETELY DRAW BOTH THE P.S.S. AND THE F.T.S. AND THEN PLACE THE IMAGE CENTERING MARKS INSIDE THESE. ALL THESE LINES ARE NOT NECESSARY. REMEMBER, YOU ARE WORKING UP-SIDE DOWN.	SILVERPRINT PAPER, 8 1/2 X 11"	SEE INSTRUCTOR

WHEN YOU GET YOUR NEGATIVES (SEE ILLUSTRATION) EXAMINE THEM CAREFULLY. THEY WILL BE STRIPPED-UP ON A SMALL FLAT (10 X 15 1/2") FOR THE OFFSET PRESS. THE P.S.S. IS 5 1/2 X 7 1/2" WITH BOTH OF THESE FORMS ON IT. THE F.T.S. IS 3 1/2 X 5" FOR EACH OF THESE FORMS AND EACH FORM IS EXACTLY CENTERED IN THIS SIZE. THE TWO FORMS WILL BE SIDE BY SIDE AND THE P.S.S. WILL HAVE A 1/4" TRIM ON ALL FOUR SIDES (WHEN FINISHED) AND ALSO A CHOP-CUT BETWEEN THE TWO FORMS. THERE SHOULD BE NO REFERENCE MARKS SHOWING. NOTE THAT ONE NEGATIVE IS CLEAN AND THE OTHER SHOWS WRITING AND MARKS THAT MUST BE REMOVED OR COVERED.

JOB STEPS

1. TAKE ALL EQUIPMENT AND MATERIALS TO YOUR WORK AREA.

2. SELECT AND CLEAN A GEAR TRACK LIGHT TABLE AND GET THE NEGATIVES YOU NEED FOR THIS STRIPPING PROJECT (MOD #4).

3. WITH THE SCISSORS, TRIM THE FORMS APART, LEAVING 1/2" TO 1" OF NEGATIVE BEYOND EACH IMAGE.

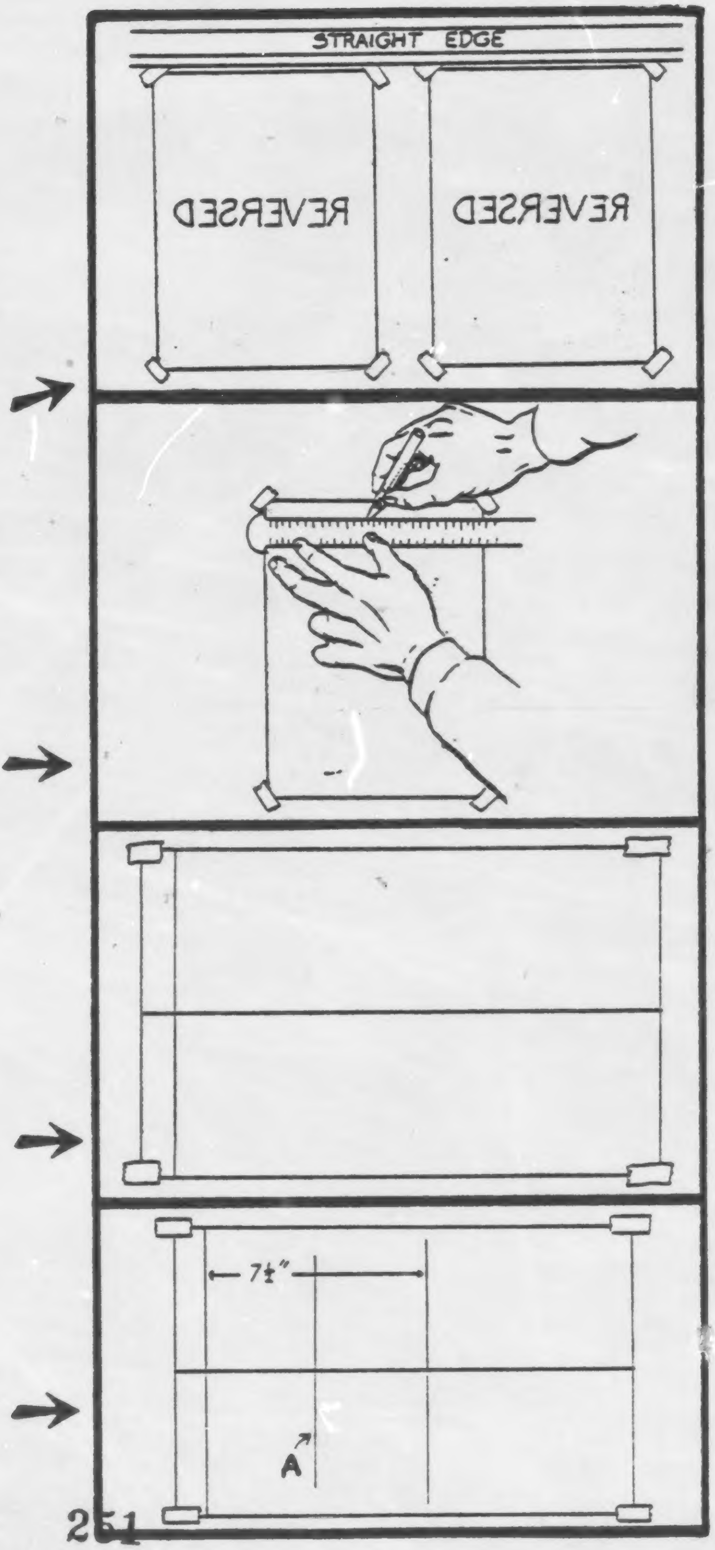
4. TAPE EACH NEGATIVE TO THE LIGHT TABLE SO THE SHORT SIDE IS SQUARE TO THE STRAIGHT EDGE.

5. DOUBLE-CHECK YOUR WORK FOR SQUARENESS WITH A METAL TRIANGLE AND STRAIGHT-EDGE.

6. WITH A LINE GAUGE, LOCATE THE EXACT CENTER OF IMAGE FOR EACH DIRECTION (A SOFT PENCIL OR SMALL SCRATCH) AND THEN SCRIBE YOUR CENTERING REFERENCE MARKS. USING A RAZOR BLADE, X-ACTO KNIFE OR A FINE SCRIBBLER, MAKE A MARK 1/4" OFF EDGE OF NEGATIVE. YOU CAN SAVE TIME BY WAITING TO OPAQUE UNTIL AFTER THE WINDOW IS CUT OUT.

7. TAPE A 10 X 15 1/2" MASKING SHEET TO THE LIGHT TABLE AND USING A FINE PEN, CAREFULLY DRAW IN THE CENTER LINE OF THE PLATE (PLATE IS 10" WIDE) AND THE LEAD EDGE LINE (AS FOR MOD #002 IN THIS STRIPPING SERIES).

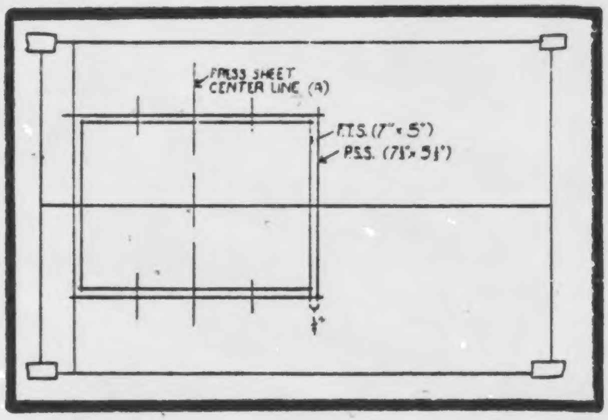
8. DRAW THE CENTER LINE (A) FOR THE 7 1/2" DIRECTION (SEE ILLUSTRATION).



JOB STEPS

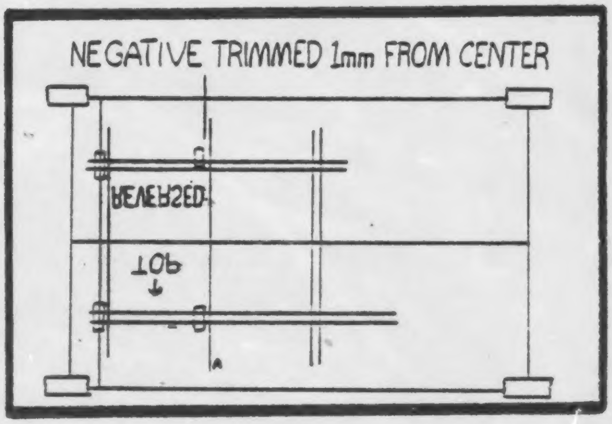
9. NOW DRAW IN YOUR TWO F.T.S. FORMS. THESE WILL BE 3 1/2" FROM THE PRESS SHEET CENTER LINE AND THE 5" WILL BE CENTERED ON THE MASKING SHEET CENTER LINE. DOUBLE-CHECK YOURSELF, TO SEE THAT THERE IS EXACTLY 1/4" BETWEEN THE F.T.S. LINES AND THE P.S.S. LINES.

10. LOCATE THE VERTICAL CENTER FOR EACH OF THE F.T.S. FORMS (SHOULD BE 1 3/4" FROM THE PRESS SHEET CENTER LINE). DRAW THESE LINES LONG ENOUGH SO THEY CAN BE USED FOR CENTERING THE NEGATIVES. DOUBLE-CHECK.

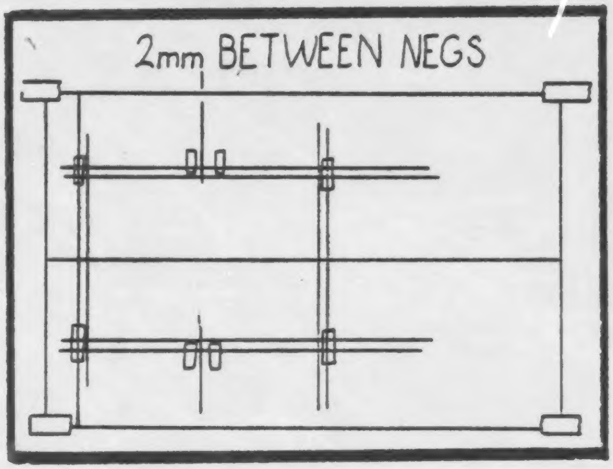


11. POSITION IN THE P.S.S. ON ONE OF THE REFERENCED NEGATIVES (AS FOR MOD #003 IN THIS SERIES) USING THE PROPER CENTERING LINES. TEMPORARILY HOLD IN PLACE WITH MASKING TAPE ON THE TOP (WHICH SHOULD BE TOWARD YOU) AND BOTTOM. BE SURE YOU HAVE THE EMULSION UP (WRONG READING).

12. THE MARGIN BETWEEN THE TWO FORMS IS NARROW. SO, WITH A SHARP RAZOR BLADE, CUT OFF THE EXCESS NEGATIVE WHICH WOULD OVERLAY THE OTHER FORM. TRIM THE FORM NEGATIVE SO IT IS ABOUT ONE MILLIMETER (1 MM) SHORT OF THE PRESS SHEET CENTER LINE (A) TO PREVENT ANY OVERLAP.



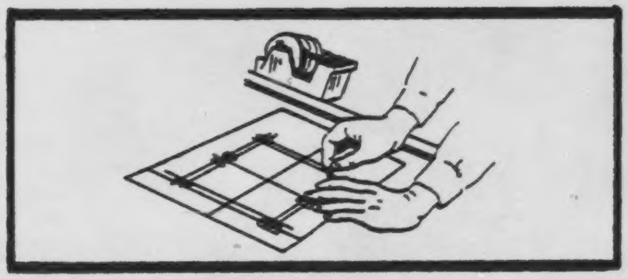
13. REGISTER THE SECOND FORM IN THE SAME MANNER. TAPE TEMPORARILY AND TRIM SO THERE WILL BE A 2 MM GAP WITH THE CENTER LINE (A) BETWEEN THE NEGATIVES.



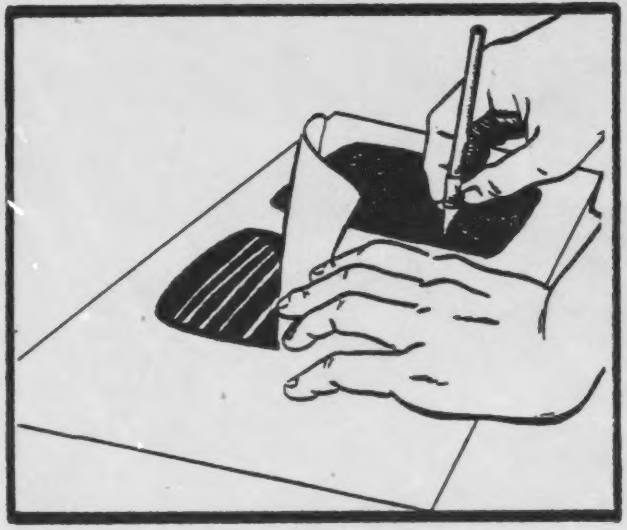
JOB STEPS

14. VERY CAREFULLY, CHECK YOUR WORK. USE THE STRAIGHT-EDGE AND ANGLE TO CHECK STRAIGHTNESS AND CHECK SEVERAL LINES WITHIN THE FORM ALSO. MEASURE FROM A SPECIFIC POINT OR CHARACTER ON ONE TO THE SAME POINT ON THE SECOND FORM ON THE OTHER TO SEE IF THEY ARE EXACTLY 3 1/2" APART. YOU SHOULD BE WITHIN 1 MM OF THE EXACT POSITION.

15. WHEN YOU ARE SURE OF YOURSELF, PROPERLY TAPE THE NEGATIVES TO THE MASKING SHEET WITH THE 1/4" RED LITHO TAPE AND REMOVE THE TEMPORARY MASKING TAPE. →



16. TURN OVER THE MASK. CUT OUT THE WINDOWS, STAYING ABOUT 1/8" FROM THE IMAGE AREA. →



17. OPAQUE. BOTH FORMS SHOULD BE CLEAR AND THE UNDESIRED WRITING MUST BE REMOVED. LARGE AREAS OF THIS WRITING MAY BE QUICKLY COVERED WITH THE RED TAPE ON THE BASE SIDE.

18. MAKE A FINAL CHECK TO SEE IF YOU HAVE THE EXACT POSITION. YOU ARE NOW READY TO MAKE A PROOF. MOD 1401 12 006 IS YOUR NEXT PROJECT.

19. TRIM DOWN THIS FLAT TO 8 1/2 X 11" BEFORE MAKING THE PROOF (THE SILVERPRINT PROOFING PAPER IS 8 1/2 X 11" AND THIS SIZE WILL STORE AND FIT IN YOUR NOTEBOOK). TAKE OFF EACH SIDE AND TRIM AT 11" FROM THE GRIPPER EDGE OF THE FLAT.

graphics

unit: STRIPPING

capital area career center

module: 1401 11 005
1401 11 005 3 date: JUNE 1977 level:

skill title: MULTIPLE IMPOSITION: STRIPPING A FOUR-PAGE WORK AND TUMBLE JOB

developed & written by: GLEN PETTIT AND DWIGHT HORNER

visuals by: CYNTHIA ALDERSON

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WORD GUIDE

ACCURATELY - CAREFULLY AND EXACTLY.

IMPOSED - ARRANGED FOR PRINTING.

PERFORMANCE OBJECTIVE

YOU ARE GOING TO LEARN:

HOW TO ACCURATELY LAYOUT THE FLAT FOR A TIGHT, FOUR-PAGE WORK AND TUMBLE JOB, THEN REFERENCE AND POSITION THE NEGATIVES EXACTLY ACCORDING TO DESIRED SPECIFICATIONS.

HOW TO PROOF AND RULE-UP A FLAT FOR CHECKING.

IN ORDER TO DO THIS YOU WILL NEED:

A GEAR TRACK REGISTER LIGHT TABLE
LINE GAUGE AND TRIANGLE
BALL POINT PENS (RED AND BLACK)
TAPE (RED AND MASKING)
8 1/2" X 11" MASKING SHEET
SILVERPRINT PAPER
NEGATIVE - PROJECT #5
RAZOR BLADE
SCISSORS
OPAQUE BRUSH
PUNCH
PLATEBURNER
FIXER
SINK
OPAQUE
GLASS CLEANER

WE WILL KNOW YOU CAN DO IT WHEN:

1. YOU HAVE EXACTLY POSITIONED ALL GUIDE LINES (P.S.S. AND F.T.S. LINES) AND DRAWN THEM ON THE FLAT.
2. YOU HAVE ACCURATELY REFERENCED AND IMPOSED THE NEGATIVES ON THE FLAT.
3. YOU HAVE CLEANED THE WINDOWS AND RULED-UP AND CLEANED THE SILVERPRINT PROOF ACCORDING TO MINIMUM REQUIREMENTS.

A TAPE OF THIS MODULE IS AVAILABLE.

INFORMATION

<table>
<tr><th>INFORMATION</th><th>MATERIALS</th><th>LOCATION OF MATERIALS</th></tr>
<tr><td rowspan="5">MANY PRINTING JOBS ARE PRINTED ON BOTH SIDES OF THE SHEET. OFTEN, ONLY ONE PLATE IS NECESSARY. THE JOB WILL BE RUN TWO OR FOUR UP AND EXACTLY THE SAME IMAGE IS PRINTED ON EACH SIDE SO THE FRONT BACKS UP IN REGISTER WITH THE BACK. THE JOB WILL BE TRIMMED SO IT ENDS UP CORRECT. RUNNING A TWO-SIDED JOB WITH ONLY ONE PLATE WILL:
1. SAVE TIME IN STRIPPING, PLATEMAKING, AND THE CAMERA
2. SAVE THE EXTRA COST OF A SECOND PLATE AND NEGATIVE
3. REDUCE PRESS SET-UP AND POSITIONING
4. SPEED UP PRODUCTION BY RUNNING-UP MORE ON A SHEET
ORGANIZING AND DETERMINING HOW A JOB WILL BE RUN BEST ON A SHEET OF PAPER IS CALLED "IMPOSITION". THERE ARE MANY FACTORS WHICH DETERMINE HOW A JOB SHOULD BE RUN AND HOW THE IMAGES SHOULD BE POSITIONED ON THE PRESS SHEET:
A. THE KIND OF PAPER;
B. MOST ECONOMICAL CUTTING FOR THE P.S.S. FROM THE LARGE BASIC SIZE SHEET (AS BOUGHT FROM THE PAPER COMPANY);
C. PAPER BRAIN DIRECTION;
D. FINISHING OPERATIONS (FOLDING, SCORING, TRIM, ETC.);</td><td>NEGATIVE: PROJECT #5</td><td>IN THE STRIPPING PROJECT DRAWER</td></tr>
<tr><td>8 1/2" X 11" MASKING SHEET</td><td>TOP SHELF, GEAR TRACK RESIGTER LIGHT TABLE</td></tr>
<tr><td>SILVERPRINT PAPER</td><td>SEE INSTRUCTOR</td></tr>
<tr><td>TAPE (RED AND MASKING</td><td>TAPE DISPENSERS MOST NEAR THE LIGHT TABLES</td></tr>
<tr><td>OPAQUE</td><td>BLACK OPAQUE IN THE LIGHT TABLE DRAWERS</td></tr>
</table>

WORD GUIDE

HALFTONES - IN ORDER FOR A PHOTOGRAPH TO BE PRINTED, IT MUST BE BROKEN DOWN INTO DOTS. THE SMALLER THE DOT, THE LIGHTER (OR WHITER) THE IMAGE WILL BE. USUALLY, THERE ARE AT LEAST 100 DOTS PER SQUARE INCH. THE PRESS CANNOT PRINT BLACK AND SHADES OF GRAY, UNLESS IT IS SCREENED AS A HALFTONE ON THE PROCESS CAMERA.

INFORMATION

E. SIZE OF SHEET THAT CAN BE RUN ON THE PRESS;
F. TOTAL QUANTITY NEEDED, ETC.

THERE ARE SIX WAYS A JOB CAN BE RUN. THE LAST THREE ARE FOR TWO-SIDED JOBS USING ONLY PLATE:

1. REGULAR - (ONE SIDE - ONE PLATE) THE JOB IS RUN THROUGH THE PRESS WITH A GRIPPER AND GUIDE SIDE; ONLY ONE PASS.

2. WORK AND TWIST - (ONE SIDE - ONE PLATE) THE JOB IS RUN THROUGH THE PRESS TWICE. THE GRIPPER AND GUIDE SIDES CHANGE BUT THE IMAGE IS ON THE SAME SIDE OF THE PAPER, USUALLY ONE NEGATIVE PRINTS ON THE TOP AND BOTTOM HALF ON THE SECOND PASS THROUGH THE PRESS.

3. WORK AND BACK - (TWO SIDES - ONE PLATE) ONE PLATE IS USED FOR THE FRONT SIDE AND A DIFFERENT PLATE IS USED FOR THE BACK SIDE.

4. WORK AND TURN - (TWO SIDES - ONE PLATE) THE GRIPPER SIDE REMAINS THE SAME BUT THE GUIDE SIDE CHANGES. THE SHEET IS TURNED FROM LEFT TO RIGHT SO THE BACK IS UP.

5. WORK AND TUMBLE - (TWO SIDES - ONE PLATE) THE GUIDE SIDE REMAINS THE SAME BUT THE GRIPPER CHANGES. THE BOTTOM IS TUMBLED SO IT BECOMES THE TOP AND THE BACK IS UP.

6. WORK AND FLOP - (TWO SIDES - ONE PLATE) BOTH THE GRIPPER AND GUIDE SIDES CHANGE. THE SHEET IS TURNED OVER AND ALSO TWISTED, SO ALL SIDES ARE CHANGED.

IT IS DIFFICULT TO CUT PAPER EXACTLY SQUARE AND THE PRESS OPERATOR WILL TRUST TWO MAIN SIDES, CALLED THE GRIPPER AND GUIDE SIDES. THE GRIPPER IS WHAT HOLDS THE SHEET ON THE PRESS AND IS MOST IMPORTANT. THE GUIDE SIDE IS USUALLY TO THE LEFT OF THE SHEET (AS YOU LOOK AT IT). IT IS THE SIDE NEAREST THE OPERATOR AND CONTROLS. IF THE PAPER IS CUT WRONG, TRUST THESE TWO SIDES ON THE PRESS AND ON THE CUTTER AND YOU STILL SAVE THE JOB FOR ACCURACY IN RUNNING SECOND COLORS.

OF THE LAST THREE WAYS TO RUN A TWO-SIDED JOB, "WORK AND TURN" WOULD BE THE BEST TO USE BECAUSE THE GRIPPER REMAINS THE SAME. A

WORD GUIDE

BLEEDS - THE PRINTED IMAGE RUNS OFF THE TRIMMED EDGE OF THE EDGE OF THE PAPER. TYPE NEVER BLEEDS BUT, MANY TIMES, HALFTONES WILL BLEED.

DUMMY - THIS IS A "WORKING BLUEPRINT" OF A JOB. IT IS USUALLY ROUGH BUT WILL SHOW BASICALLY HOW A JOB WILL LOOK. THE LAYOUT PERSON WILL MAKE A VERY ROUGH ONE WHICH THE STRIPPER CAN USE. THE STRIPPER WILL USUALLY MAKE AN ACCURATE SILVERPRINT DUMMY FOR THE PRESS OPERATOR, CUTTER, OR FOLDER OPERATOR. THE CUSTOMER WILL USUALLY CHECK THE SILVERPRINT DUMMY. ITS MAIN FUNCTION IS TO SHOW HOW THE JOB WILL APPEAR, THE EXACT PAGE IMPOSITION, AND WHERE THE JOB WILL BE TRIMMED OR FOLDED.

INFORMATION

GOOD CUTTER SHOULD BE ABLE TO STAY WITHIN 1MM (1/32") ACCURACY. FOR MOST JOBS, THIS WOULD BE ACCEPTABLE BUT IT IS NOT FOR COLOR REGISTRATION USING HALFTONES.

THIS MOD IS FOR A MULTIPLE IMPOSITION: STRIPPING A FOUR-PAGE WORK AND TUMBLE JOB. THERE ARE ACTUALLY FOUR PAGES TO THIS "SPORTS SCHEDULE" WHICH MUST BE PROPERLY IMPOSED (POSITIONED) IN A SPECIFIC ORDER SO THAT WHEN THIS JOB IS PRINTED, BACKED-UP, AND THEN TRIMMED, THE FINAL PRODUCT WILL BE CORRECT. THE P.S.S. AND F.T.S. ARE GIVEN AND EACH IMAGE MUST BE CENTERED IN ITS PROPER PAGE. YOU MUST ALLOW FOR FOUR-SIDE TRIM OF 1/2" ON EACH SIDE AS THERE IS NO TRIM BETWEEN THE TWO SCHEDULES.

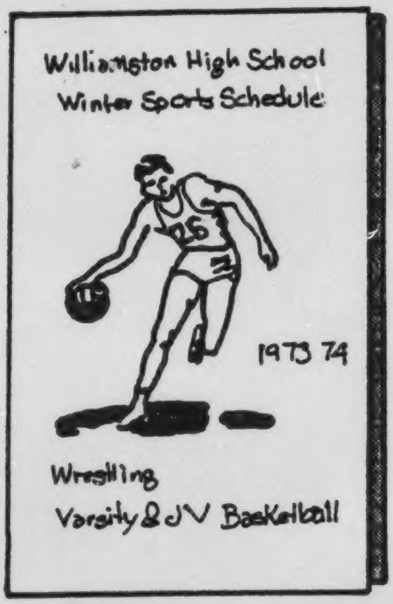
TWO-SIDED JOBS SHOULD BE STRIPPED SO THE PRESS OPERATOR DOES NOT HAVE TO MAKE ANY CORRECTIONS ON THE PRESS. SHE/HE SHOULD BE ABLE TO RUN THE JOB, TURN THE STOCK, AND BACK-UP THE JOB EXACTLY. WHEN YOU HAVE A TRIM, LEAVE A REGISTERING MARK WHICH BLEEDS. THIS WILL ENABLE THE PRESS OPERATOR TO EASILY CHECK REGISTRATION AT A GLANCE, ON THE EDGE OF THE PILE, AS IT IS DELIVERED FROM THE PRESS.

IT IS A GOOD IDEA TO MAKE A "DUMMY" OF ANY JOB TO BE IMPOSED. A DUMMY IS JUST A SCRAP PIECE OF PAPER WITH THE PAGE NUMBERS DRAWN IN. THIS WILL CHECK YOUR IMPOSITION AS YOU WORK. FOR THIS MOD, YOU WILL PROBABLY MAKE TWO DUMMIES AND TAPE THEM TOGETHER TO GET THE RIGHT IMPOSITION. IT IS A GOOD TRADE PRACTICE TO ALWAYS UNDERLINE YOUR PAGE NUMBERS AND TO PLACE THE NUMBERS NEAR THE BOTTOM (THE 6 AND 9 ARE EASILY CONFUSED IF READ WRONG).

THE ILLUSTRATION ON THE NEXT PAGE IS A SAMPLE OF THE JOB YOU WILL TAKE FROM THE STRIPPING PROJECT DRAWER. EXAMINE IT CAREFULLY. THE P.S.S. IS 5" X 7 1/2" AND THE F.T.S. IS 4" X 3 1/4".

INFORMATION

THIS SCHEDULE WILL BE FOLDED (SEE ILLUSTRATION) SO IT IS 2" X 3 1/4" WHEN FINISHED. ON THE P.S.S., THERE WILL BE A 1/2" TRIM ON ALL FOUR SIDES, AND IT IS PRINTED TWO-UP.



WORD GUIDE

"BUTT" - TOUCHING END TO END, OR SIDE TO SIDE, WITHOUT OVERLAPPING.

SCRIBE - MARKING A LINE BY CUTTING OR SCRATCHING.

JOB STEPS

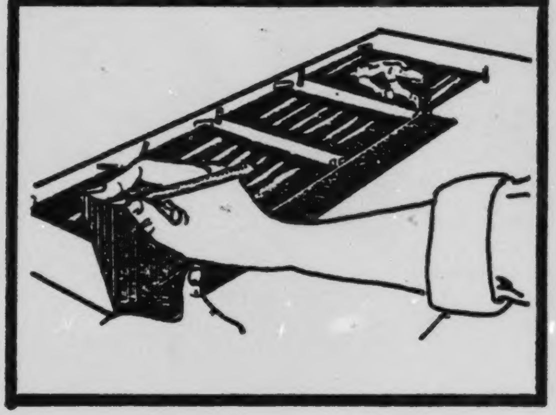
1. TAKE ALL EQUIPMENT AND MATERIALS TO YOUR WORK AREA.

2. SELECT AND CLEAN A GEAR TRACK LIGHT TABLE.

3. GET THE NEGATIVE FOR STRIPPING PROJECT #5.

4. TRIM EACH OF THE FOUR PAGES APART ON THE NEGATIVE, ALLOWING AT LEAST 1/4" MARGIN FROM THE IMAGE TO THE EDGE. WHEREVER THE NEGATIVES "BUTT" TOGETHER, MORE WILL BE TRIMMED OFF LATER.

5. TAPE EACH OF THE NEGATIVES SQUARE TO THE LIGHT TABLE AND SCRIBE YOUR CENTERING LINES (RAZOR BLADE OR X-ACTO KNIFE). BE SURE TO DOUBLE-CHECK SQUARENESS SEVERAL TIMES.



6. NOW MAKE YOUR "DUMMIES":

A. CUT TWO PIECES OF SCRAP PAPER TO 4" X 3 1/4" (F.T.S. OPEN).

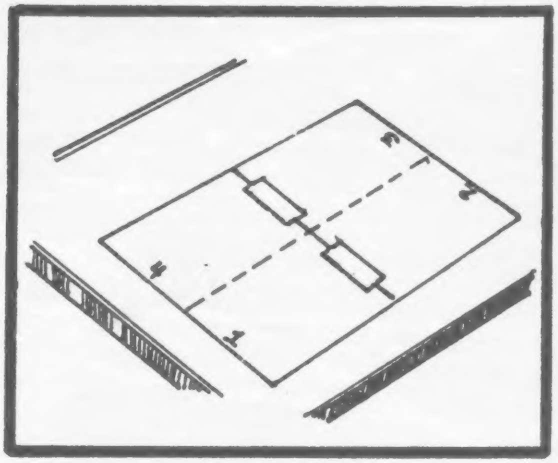
B. NUMBER EACH PAGE OF BOTH SCHEDULES. THE COVER PAGE IS PAGE ONE, INSIDE LEFT IS PAGE TWO, INSIDE RIGHT IS THREE, AND THE BACK PAGE IS FOUR. PLACE NUMBERS AT THE BOTTOM OF EACH PAGE.

C. DRAW LINES UNDER EACH PAGE NUMBER.

D. DOUBLE-CHECK YOUR DUMMIES.

JOB STEPS

E. TAPE THE TWO DUMMIES SO THE TOPS ARE TOGETHER AND ALL FOUR PAGES ARE VISIBLE FROM EACH SIDE (SEE ILLUSTRATION).

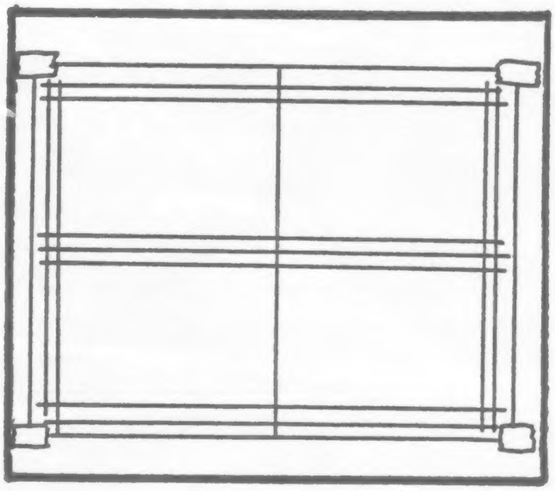


F. HOLD THE SHEET ON THE SIDES WHICH ARE NOW TAPED TOGETHER AND TUMBLE THE COMPLETE DUMMY.

NOTE: NOTICE THE LOCATION OF THE PAGES WHEN YOU TUMBLE THE DUMMY. THE PAGES WILL APPEAR IN THE SAME EXACT POSITION ON EACH SIDE. THIS IS A TWO-UP WORK AND TUMBLE.

7. YOU ARE NOW READY TO LAYOUT THE FLAT.

A. TAPE A SMALL 8 1/2" X 11" MASKING SHEET (THIS SIZE IS TO BE USED FOR STRIPPING PROJECTS ONLY) TO THE LIGHT TABLE.

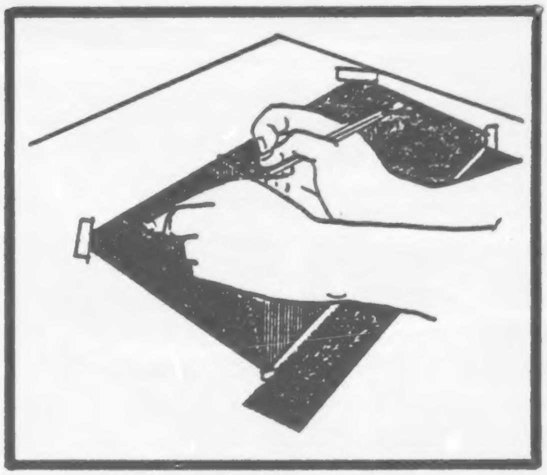


B. LAYOUT YOUR P.S.S. (5" X 7 1/2") AND FTS (4" X 3 1/4") LINES ON THIS FLAT, APPLYING WHAT YOU HAVE LEARNED SO FAR IN THIS STRIPPING MOD SERIES.

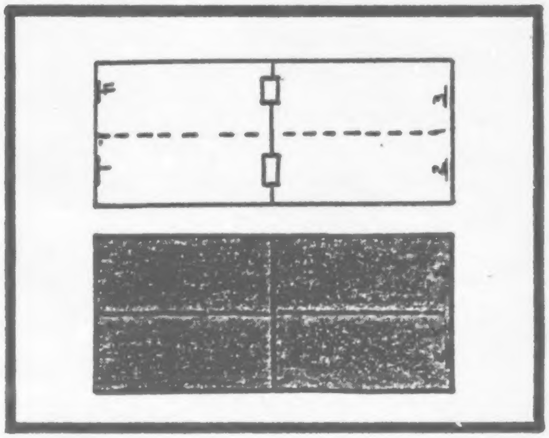
C. THERE WILL BE A 1/2" TRIM ON ALL FOUR SIDES INSIDE THE P.S.S. IT WOULD HELP TO DRAW THE P.S.S. AND THE FTS IN DIFFERENT COLORS (RED AND BLACK BALL POINT) AS THIS WOULD SAVE SOME CONFUSION ON THE LAYOUT.

JOB STEPS

8. LOCATE AND MARK THE VERTICAL AND HORIZONTAL CENTERS FOR EACH PAGE WITH A SHORT (1/2") LINE.



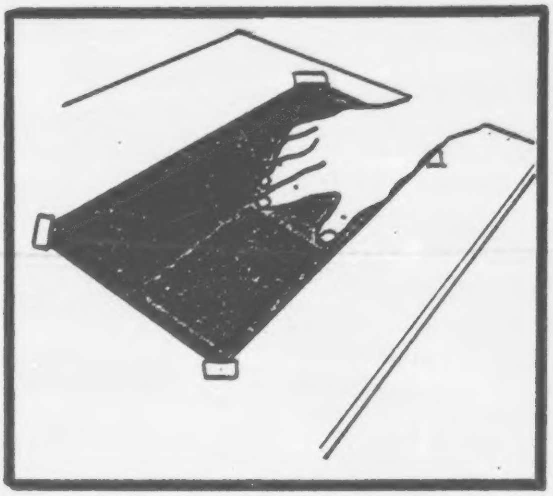
9. IT IS EASY TO CONFUSE THE PAGE IMPOSITION. TO GET THE PROPER PAGE SEQUENCE TRANSFERRED CORRECTLY FROM THE DUMMY TO THE FLAT, SELECT THE GRIPPER EDGE OF THE DUMMY AND LAY THIS END TO THE LEFT. THE DUMMY WILL BE UP, FACING YOU, AND THE GRIPPER EDGE EVEN TO THE LEAD EDGE LINE ON THE FLAT. THE GUIDE SIDE OF THE DUMMY (NEAR YOU) WILL BE ON THE GUIDE SIDE LINE OF THE PSS YOU HAVE DRAWN (THE 7 1/2" LINE WHICH IS AWAY FROM YOU). REMEMBER YOU ARE WORKING UPSIDE DOWN ON THE FLAT. (SEE ILLUSTRATION)



NOTE: IF YOU CHOSE PAGES 1 AND 4 FOR THE GRIPPER, (AS IN ILLUSTRATION) THEN PAGE 1 IS THE GUIDE (AS IT GOES THROUGH THE PRESS). AS YOU HOLD THE DUMMY TO THE FLAT, PAGES ONE AND TWO SHOULD LINE UP WITH THE FAR LINE OF THE P.S.S. ON THE FLAT (GRIPPER SIDE).

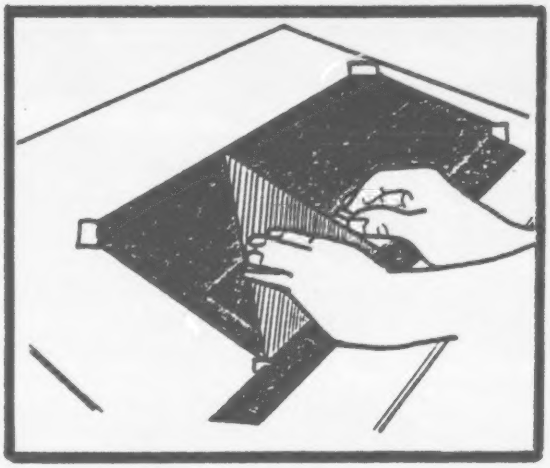
10. WHEN YOU ARE SURE YOU HAVE THE CORRECT IMPOSITION, MARK THE RESPECTIVE PAGE NUMBERS ON THE FLAT.

JOB STEPS



11. SELECT THE NEGATIVE PIECE FOR PAGE 4 AND POSITION THIS ON THE FLAT IN ITS PROPER PLACE. GET THE POSITION WITH THE CENTERING REFERENCE MARKS.

12. WHEN YOU HAVE IT IN PLACE, TAPE THE OUTER TWO SIDES WITH TEMPORARY MASKING TAPE (ABOUT ONE INCH PIECES).

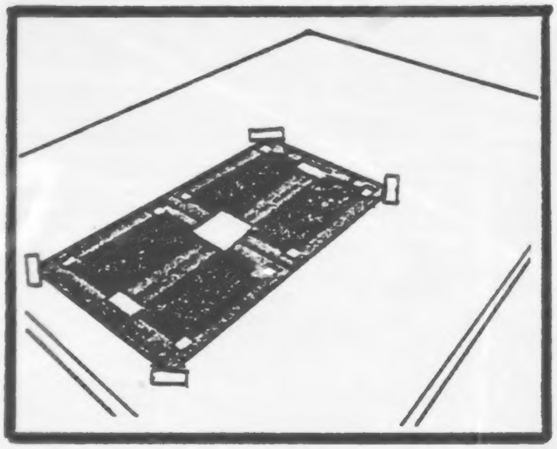


13. TRIM THE INNER TWO SIDES WHERE PAGE 4 WILL JOIN WITH PAGES 1 AND 3. THE NEGATIVE SHOULD BE ABOUT 1MM SHORT OF THE LINE DRAWN BETWEEN THEM. BE SURE TO HOLD THE NEGATIVE FLAT, SECURE, AND TO USE A METAL EDGE WHEN CUTTING WITH THE RAZOR BLADE. YOU DO NOT HAVE TO GO COMPLETELY THROUGH THE NEGATIVE; JUST BEND BACK THE TRIM AND IT WILL BREAK OFF. IF YOU ARE WORRIED ABOUT CUTTING INTO THE FLAT, LAY AN OLD PIECE OF NEGATIVE UNDER THE PAGE NEGATIVE YOU ARE CUTTING.

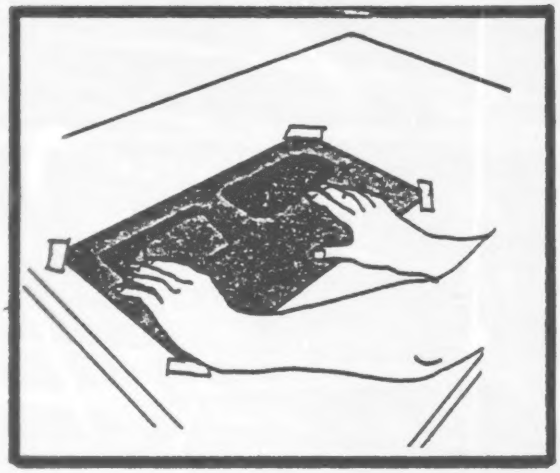
14. REPEAT THIS WITH EACH OF THE OTHER THREE PAGES (STEPS 9-11). BE SURE THE PAGE NEGATIVES DO NOT OVERLAP BUT ARE ABOUT 2MM SHORT OF EACH OTHER (1/8").

15. NOW, VERY CAREFULLY CHECK YOURSELF. USE SEVERAL VERTICAL AND HORIZONTAL LINES FOR REFERENCES.

JOB STEPS



16. WHEN YOU ARE SURE IT IS PERFECT, YOU CAN START APPLYING THE 1/4" RED LITHO TAPE. IN THE EXACT CENTER OF FOUR PAGE NEGATIVES, PLACE A PIECE OF TAPE. USE A PIECE IN EACH OF THE FOUR CORNERS AND ON EACH OF THE FOUR NEGATIVE CORNER SIDES (A TOTAL OF NINE PIECES) (SEE ILLUSTRATION). REMOVE THE TEMPORARY MASKING TAPE CAREFULLY SO THAT NONE OF THE RED LITHO TAPE COVERS ANY OF THE IMAGE AREA. IT SHOULD BE AT LEAST 1/8" AWAY FROM IMAGE WHEN ON THE EMULSION SIDE.

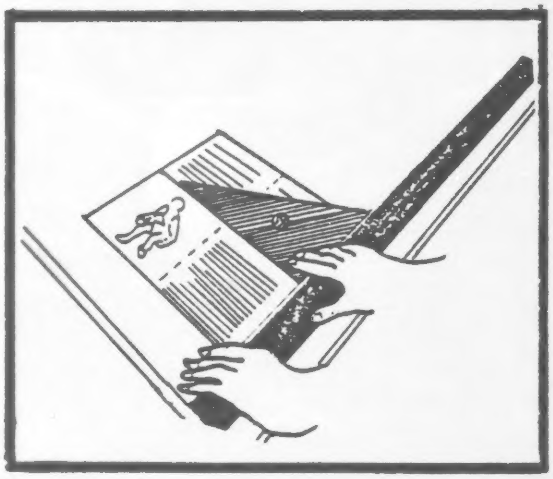


17. REMOVE THE FLAT AND CUT OUT YOUR WINDOWS CAREFULLY. STAY ABOUT 1/8" AWAY FROM THE IMAGE BUT LEAVE AS MUCH PAPER BETWEEN THE FORMS AS POSSIBLE. IF NECESSARY, YOU MAY APPLY SOME MAGIC TAPE IN THE CENTER TO HOLD THE MASKING SHEET PAPER IF IT IS WEAK OR TORN (IT MAY BEND AND BLOCK OUT SOME OF THE IMAGE). THE MAGIC TAPE MAY COVER SOME IMAGE ON LINE COPY (IF NECESSARY) TO HOLD THIN STRIPS OF MASKING SHEET PAPER. THIS DOES NOT HAVE A MAJOR EFFECT ON LINE COPY BUT DOES EFFECT HALFTONES.

18. DO ANY NECESSARY OPAQUING.

19. MAKE A SILVERPRINT PROOF ON 8 1/2" X 11" PAPER.

20. ON THE DRY SILVERPRINT, DRAW YOUR P.S.S. AND F.T.S. LINES. INDICATE THE FOLD WITH A DOTTED LINE (DASHES). USE A RED PEN OR PENCIL FOR THE P.S.S. AND BLUE FOR THE F.T.S. LINES.



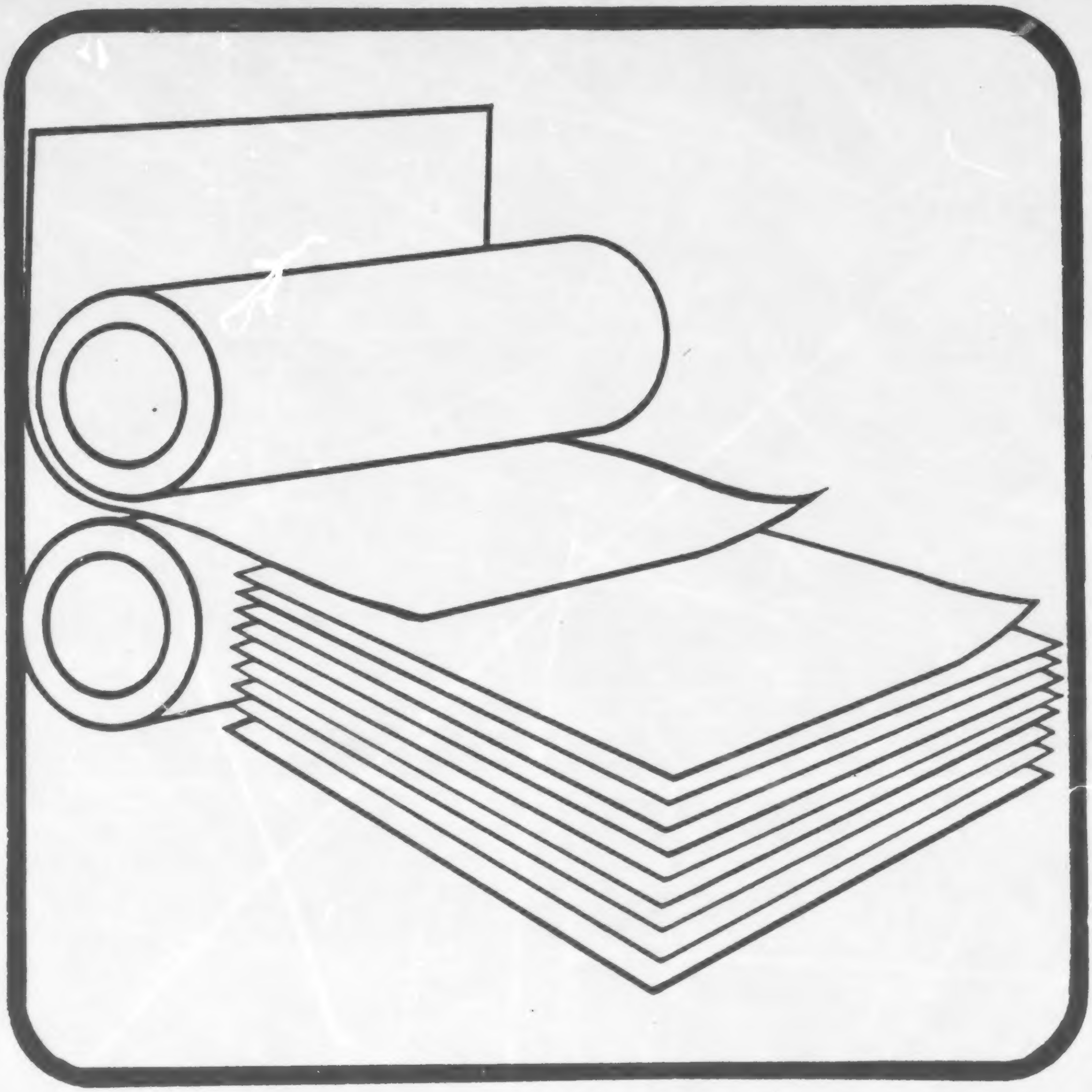
WORD GUIDE

JOB ENVELOPE - LARGER JOBS REQUIRE MANY DIFFERENT WORKERS AND MANY PARTS OF PAPERS. TO KEEP ALL THIS COORDINATED AND ORGANIZED, EVERYTHING IS KEPT IN A JOB ENVELOPE WHICH NORMALLY FOLLOWS THE JOB THROUGH THE PRODUCTION STEPS IN THE SHOP. EVERYTHING IMPORTANT SHOULD BE KEPT IN THIS ENVELOPE (ORIGINALS, CUSTOMER'S ORDERS, COSTS, INVOICES, ALL INSTRUCTIONS, DUMMIES, PROOFS, AND THE SAMPLES OF THE FINAL PRODUCT). LARGE PASTE-UPS, FLATS AND PLATES ARE USUALLY KEPT IN A SEPARATE PACKAGE OR DRAWER. THE JOB ENVELOPE WILL FLOW WITH THE MAIN PART OF THE JOB THROUGH THE SHOP AND USUALLY, YOU CAN INITIAL IT WITH WHAT YOU'VE DONE.

JOB STEPS

NOTE: YOU HAVE JUST COMPLETED A SMALL, DETAILED AND DIFFICULT MOD ON MULTIPLE IMPOSITION AND LEARNED HOW TO MAKE A DUMMY. BEFORE YOU MAKE A PLATE OF A JOB LIKE THIS, YOU SHOULD MAKE A SILVERPRINT PROOF TO CHECK REGISTRATION AND IMPOSITION. TWO SILVERPRINTS CAN BE TAPED TOGETHER BACK-TO-BACK TO SHOW EXACTLY HOW THE JOB WILL BE REGISTERED. YOUR DUMMY AND THE SILVERPRINT PROOF SHOULD BE KEPT IN THE JOB ENVELOPE FOR THE PRESS OPERATOR.

HAVE THE INSTRUCTOR OR MANAGER CHECK YOUR FINAL WORK FOR ACCURACY. YOUR INSTRUCTOR WILL ASSIGN YOU TO ANOTHER PROJECT MODULE.



graphics

unit: STRIPPING

capital area career center

module: 1401 11 006
1401 11 006 3 date: JUNE 1977 level:

skill title: MULTIPLE IMPOSITION: STRIPPING EIGHT NEGATIVES IN REGISTER

developed & written by: GLEN PETTIT AND REVISED BY DWIGHT HORNER

visuals by: BRUCE BENNETT

WORD GUIDE

CENTER REGISTER MARKS - THESE INDICATE THE EXACT CENTER OF A P.S.S.; BOTH THE HORIZONTAL AND VERTICAL ARE USUALLY INDICATED

ACCURATE - EXACT, PRECISE

REGISTER - CORRECT POSITIONING

PERFORMANCE OBJECTIVE

YOU ARE GOING TO LEARN:

HOW TO POSITION EIGHT TICKETS FOR THE P.S.S. WITH EACH FORM CENTERED IN ITS F.T.S. AND HOW TO INCLUDE CENTERING REGISTER MARKS FOR THE PRESS OPERATOR ON THE MARGIN OF THE P.S.S.

IN ORDER TO DO THIS YOU WILL NEED:

A GEAR-TRACK REGISTER LIGHT TABLE
LINE GAUGE AND TRIANGLE
BALL POINT PENS (BLACK AND RED)
RAZOR BLADE
SCISSORS
OPAQUE BRUSH
PUNCH
PLATEBURNER
SINK
NEGATIVES - PROJECT #6
8 1/2" X 11" MASKING SHEET
SILVERPRINT PAPER
FIXER
TAPE (RED AND MASKING)
OPAQUE
GLASS CLEANER

WE WILL KNOW YOU CAN DO IT WHEN:

1. THE REFERENCED NEGATIVES MAY BE QUICKLY AND EXACTLY POSITIONED IN THE MARKED FLAT.
2. THE P.S.S. IS ACCURATELY DRAWN WITHIN 1 MM (1/32") ALLOWING FOR PERFECT REGISTER AND TRIM MARGINS.
3. THE COMPLETED FLAT IS OPAQUED COMPLETELY AND ALL WINDOWS ARE CUT CLEAN AND CLEAR.
4. THE SILVERPRINT PROOF IS FLAT, SHARP AND THE IMAGE IS DARK WITH ALL P.S.S. AND F.T.S. RULES LINES IN THEIR EXACT POSITIONS (APPROXIMATE TIME IS 45 MINUTES FOR STRIPPING).

A TAPE OF THIS MODULE IS AVAILABLE.

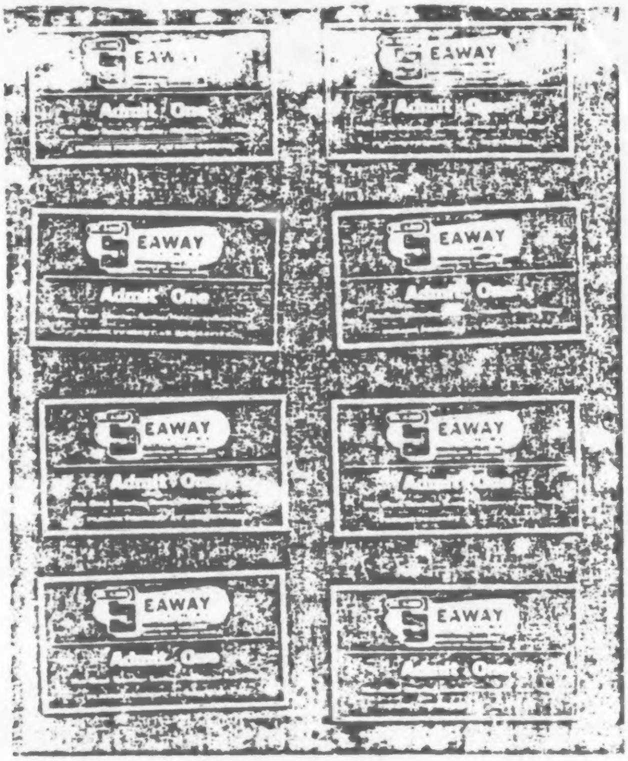
INFORMATION

THERE ARE TWO COMMON WAYS TO REGISTER WHEN YOU HAVE A LOT OF SIMILAR FORMS LIKE THIS: (A) IMAGE CENTERING AND (B) IMAGE MARGIN.

IT IS UP TO THE STRIPPER TO DECIDE WHICH ONE HE/SHE LIKES. IF DONE CAREFULLY, EACH IS ACCURATE. IMAGE CENTERING MAY TAKE LONGER BUT IT IS EASIER, WHILE THE IMAGE MARGIN METHOD IS FASTER, THOUGH YOU MUST BE MORE CAREFUL.

THERE ARE TWO DIFFERENT NEGATIVES IN THE ENVELOPE FOR THIS MOD. ALL MEASUREMENTS ARE IDENTICAL FOR EACH NEGATIVE. IF YOU WANT, STRIP A DIFFERENT NEGATIVE FOR EACH METHOD AND COMPARE FOR YOURSELF.

THE ILLUSTRATION BELOW REPRESENTS A SAMPLE NEGATIVE THAT YOU WILL BE STRIPPING ONTO A FLAT FOR THIS PROJECT. AFTER EXAMINING IT, YOU WILL SEE THAT THERE ARE EIGHT-UP COUPONS. THIS WILL BE STRIPPED-UP ON A SMALL 8 1/2" X 11" MASKING SHEET (THE P.S.S. IS 7 1/2" X 9" AND THE F.T.S. IS 2" X 3 1/2"). EACH IMAGE IS EXACTLY CENTERED IN THE FTS AND THERE IS A 1/4" TO 1/2" TRIM ON ALL FOUR SIDES. CENTERING REGISTER MARKS WILL APPEAR IN THE TRIM MARGIN ON ALL FOUR SIDES.



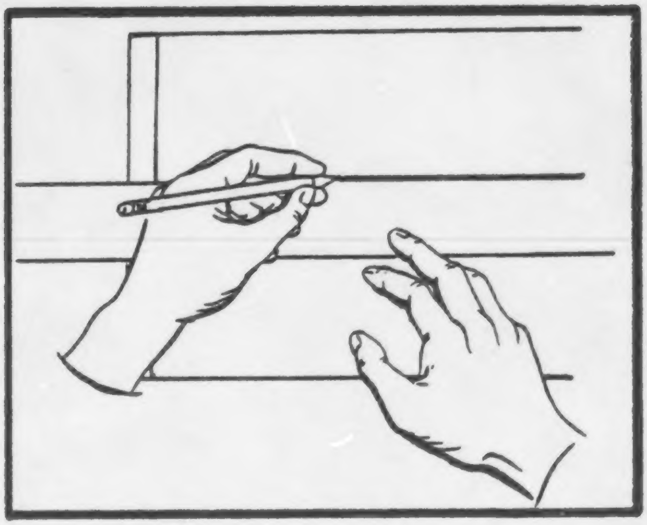
JOB STEPS

1. TAKE ALL EQUIPMENT AND MATERIALS TO YOUR WORK AREA.

2. CLEAN A GEAR-TRACK LIGHT TABLE AND GET THE NEGATIVES FOR STRIPPING PROJECT #6.

3. TRIM THE EIGHT NEGATIVES FOR THIS MOD. LEAVE ABOUT 5 MM (LESS THAN 1/4") MARGIN ON ALL FOUR SIDES OF EACH FORM.

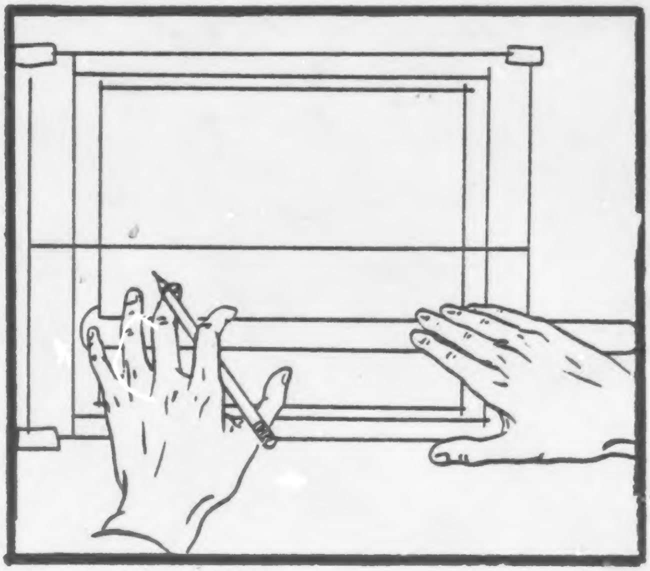
4. DRAW THE FLAT LAYOUT FOR THE LEAD EDGES AND CENTER LINE. →



5. DRAW THE P.S.S. (7 1/2" X 9"). →

NOTE: IT IS NOT NECESSARY TO DRAW IN ALL THE F.T.S. LINES. THE TOTAL AREA OF ALL THE F.T.S. TOGETHER IS 7" X 8" AND THIS WILL GIVE YOU A 1/2" TRIM MARGIN ON THE TOP AND BOTTOM (GRIPPER & TAIL), AND A 1/4" TRIM MARGIN ON THE SIDES.

6. DRAW THE OUTSIDE LINES OF F.T.S. →



7. LOCATE THE CENTER FOR EACH F.T.S. AND CAREFULLY DRAW IN THESE LINES WITH A RED BALL POINT PEN.

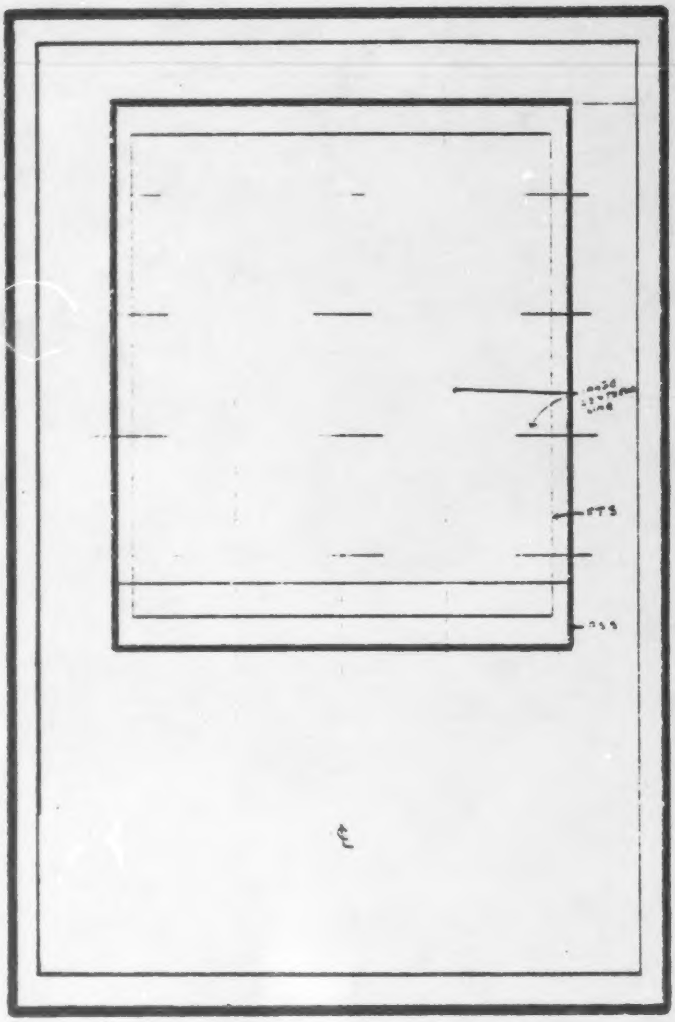
WORD GUIDE

SCRIBE - TO ETCH OR REMOVE PART OF THE EMULSION ON A NEGATIVE OR PLATE. THIS PRODUCES A NEAT, UNIFORM LINE

JOB STEPS

8. A. IMAGE CENTERING METHOD

1. DRAW IMAGE CENTERING LINES EXACTLY 2" OR 3 1/2" APART, SINCE THE FORMS ARE EXACTLY 2" X 3 1/2". →



2. SCRIBE YOUR IMAGE CENTER REFERENCE LINES IN THE EMULSION OF EACH OF YOUR EIGHT NEGATIVES.

NOTE: A MASS PRODUCTION SHORT-CUT IS TO TAPE A PIECE OF PAPER ON THE LIGHT TABLE, TAPE A NEGATIVE TO THIS, DRAW IN YOUR EXACT CENTERING LINE WITH PEN ON THE PAPER, THEN LAY EACH OF THE OTHER NEGATIVES IN REGISTER (LOOKING THROUGH THE NEGATIVES) AND SCRIBE YOUR REFERENCE MARKS ON THIS.

3. AFTER SCRIBING CENTER LINES ON NEGATIVES, CAREFULLY REGISTER EACH NEGATIVE TO THE CENTERING LINES AS YOU DID FOR THE PREVIOUS MOD.

GO TO JOB STEP #9.

WORD GUIDE

BORDER - LINES, A DESIGN OR TYPE WHICH SHOWS THE EXTREME IMAGE ON ANY ONE OR MORE SIDES, USUALLY A FRAME

JOB STEPS

8. B. IMAGE MARGIN METHOD

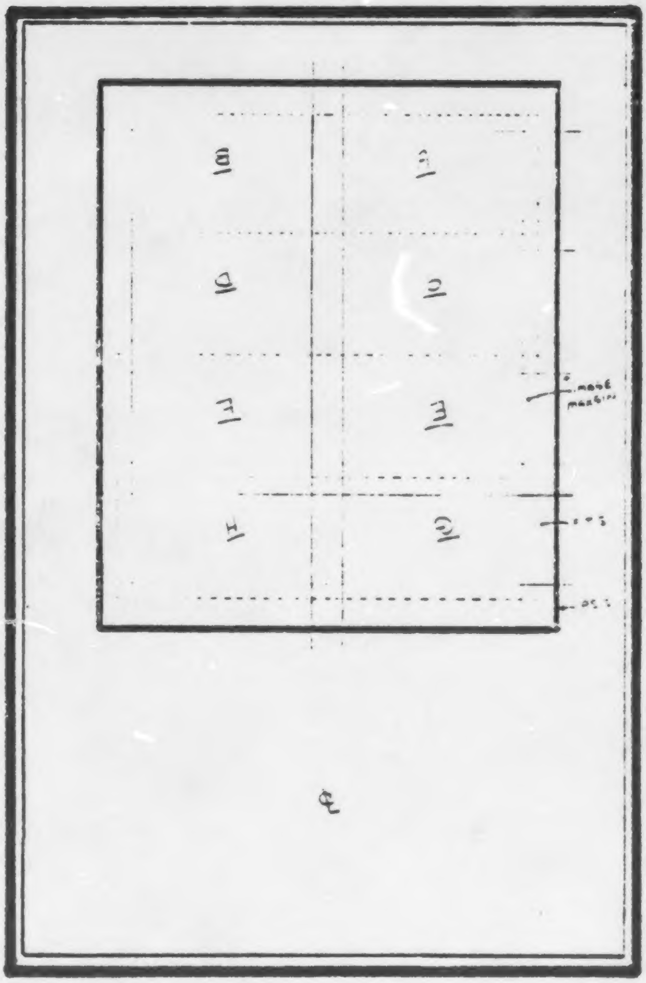
1. DRAW THE FLAT LAYOUT FOR THE LEAD EDGE AND CENTER LINE.

2. DRAW THE P.S.S. (7 1/2" X 9").

3. DRAW THE F.T.S. LINES VERY LIGHTLY WITH A DIFFERENT COLOR PEN OR PENCIL. THERE IS A 1/2" TRIM MARGIN TOP AND BOTTOM AND A 1/4" ON THE SIDES OF THE P.S.S.

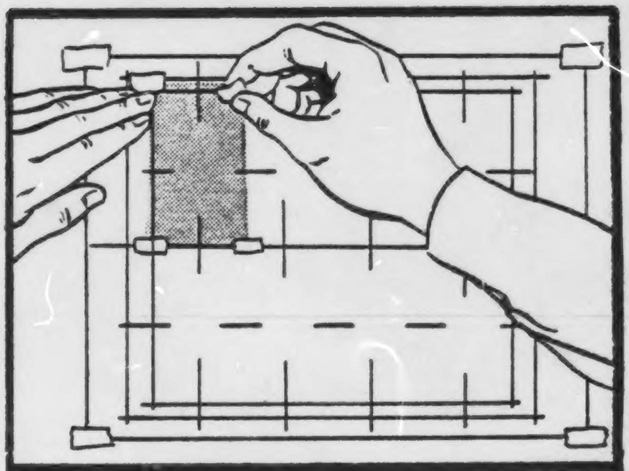
4. NOW, MEASURE YOUR IMAGE EXACTLY AND INDICATE THIS WHERE FORMS A AND B WOULD GO.

5. WITH A BALL POINT PEN (NOT THE SAME COLOR AS USED FOR THE F.T.S.) DRAW IN ALL IMAGE MARGIN LINES. THE TOP IMAGE LINE WILL BE EXACTLY 2" AWAY FROM THE ONE ABOVE OR BELOW IT, ETC. BE EXACT, THE IMAGE SIZE OF THESE FORMS IS 1 1/2" X 3".

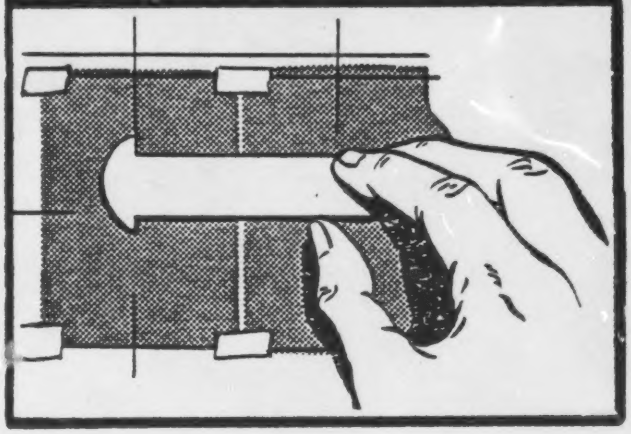


JOB STEPS

9. PLACE EACH FORM NEGATIVE IN PLACE. YOU CAN SEE THROUGH THE CLEAR BORDER TO GET THE IMAGE MARGIN POSITION, SO TEMPORARILY TAPE EACH NEGATIVE AS YOU DID IN THE PREVIOUS MOD.



10. NOW THAT YOU HAVE ALL EIGHT NEGATIVES TEMPORARILY TAPED IN POSITION WITH MASKING TAPE - VERY CAREFULLY DOUBLE-CHECK YOUR POSITIONING: LAY THE METAL RULER ON THE LEAD EDGE LINE THE TOP BORDER FOR THE FIRST NEGATIVE (A) SHOULD BE ON 3/4" (B) IS ON 2 3/4", (C) IS 4 3/4" AND (D) IS 6 3/4". THE DISTANCE FROM THE SAME CHARACTER TO THE SAME CHARACTER ON A TO B, C TO D, E TO F, AND G TO H WILL BE EXACTLY 3 1/2".



11. BRING THE STRAIGHT EDGE DOWN AND USE THE METAL ANGLE TO CHECK STRAIGHTNESS. YOU MUST BE EXACT. DO NOT MOVE THE RULER WHEN CHECKING.

12. GET FOUR SMALL PIECES OF NEGATIVE (ABOUT 1/2" X 1") AND TAPE THESE ON THE CENTER OF ALL FOUR SIDES SO A P.S.S. CENTER REFERENCE LINE MAY BE SCRIBED.

NOTE: IT MAY BE NECESSARY TO TRIM SOME OF THE NEARBY NEGATIVES TO GAIN ROOM FOR THE REFERENCE LINE.

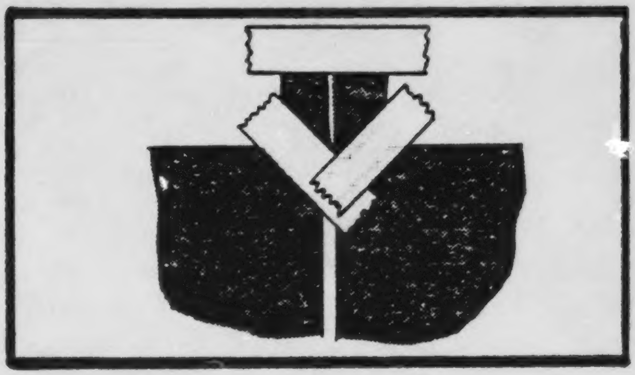
THIS REFERENCE LINE SHOULD START ABOUT 1 MM FROM THE F.T.S. AND BLEED OFF OF THE P.S.S. ANY TAPE ON THE EMULSION SIDE MUST BE AT LEAST 3 MM (1/8") FROM THE IMAGE AREA.

WORD GUIDE

BLEED - WHEN THE REGISTER LINES OR IMAGE GOES OFF THE EDGE OF A SHEET - USUALLY FOR A LARGE IMAGE TO BLEED IT IS RUN ON A LARGER SIZE PRESS SHEET AND TRIMMED AS THE EXCESS INK ON A LARGE PRESS BLEED WILL GIVE PROBLEMS

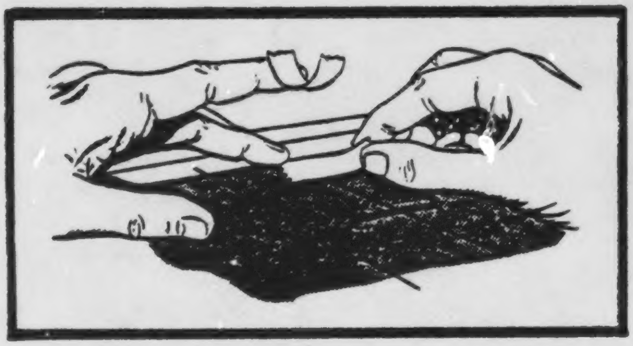
JOB STEPS

13. TAPE THE SMALL NEGATIVES (AS ILLUSTRATED). SMALLER PIECES OF TAPE MAY BE USED, IF NECESSARY.



14. WHEN ALL FOUR PIECES ARE IN POSITION, USE THE FINE SCRIBER (OR X-ACTO KNIFE) TO SCRIBE YOUR P.S.S. CENTER REFERENCE LINES.

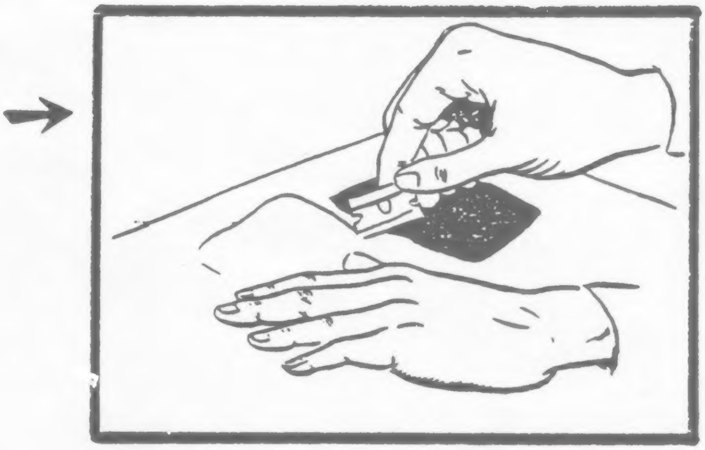
15. REMOVE THE TEMPORARY MASKING TAPE. FIRST TAPE THE INSIDE CORNERS (ABCD) (CDEF) AND (EFGH) WITH A 2" LONG PIECE OF 1/4" RED LITHO TAPE, RUNNING WIDTH-WISE (7 1/2" WAY). DO NOT REMOVE TOO MUCH OF THE TEMPORARY MASKING TAPE AHEAD OF YOUR WORK, YOU DO NOT WANT THE NEGATIVES TO MOVE. HOLD THE NEGATIVES WHILE YOU CAREFULLY REMOVE TAPE.



16. NOW TAPE YOUR OUTSIDE CORNERS AS NORMAL. DOUBLE-CHECK EVERYTHING BEFORE REMOVING THE FLAT.

JOB STEPS

17. REMOVE THE FLAT, TURN IT OVER AND CUT ALL EIGHT WINDOWS. CUT EACH FORM OUT INDIVIDUALLY AND STAY CLOSE (3 MM OR 1/8") FROM THE IMAGE.



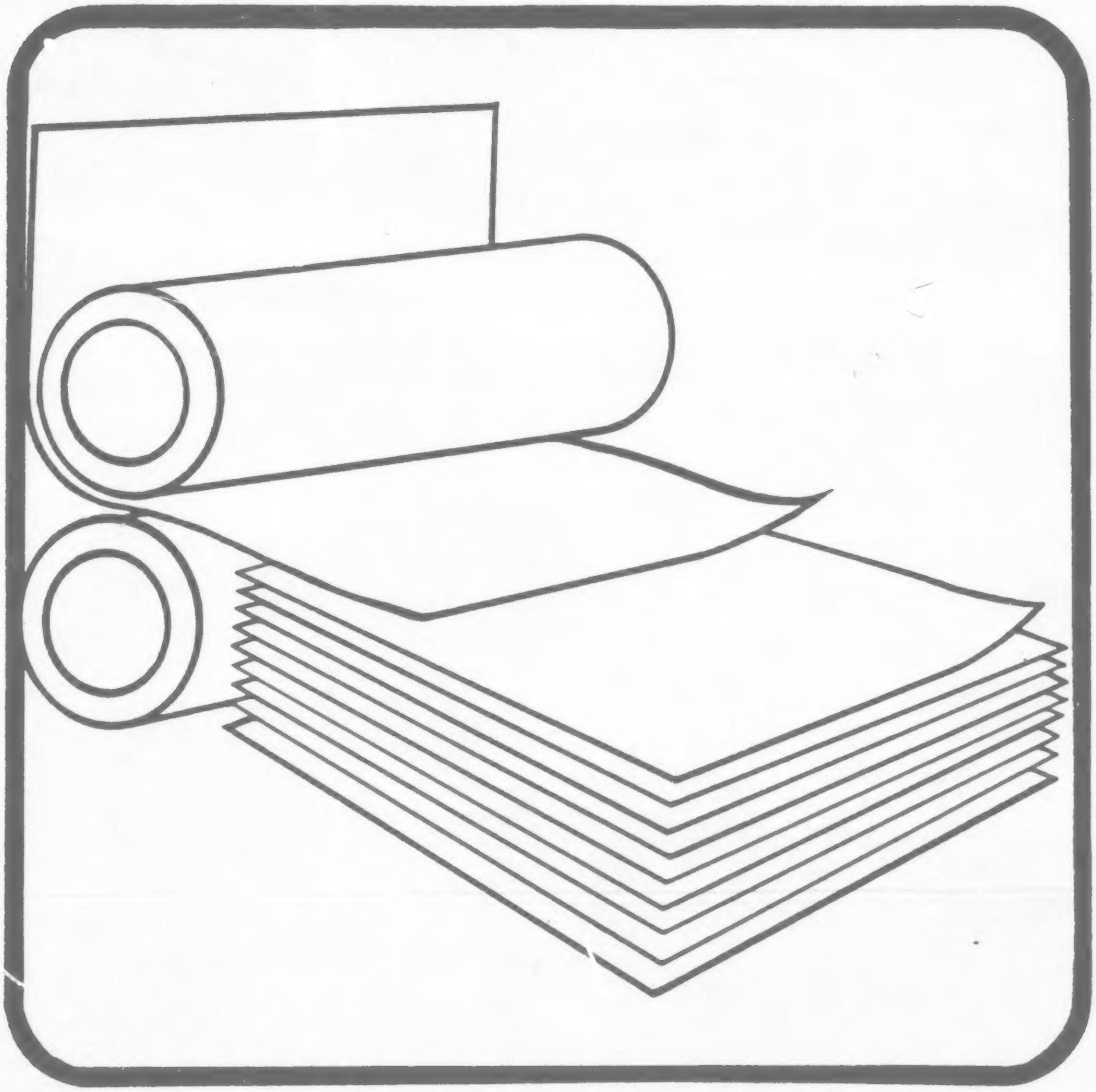
NOTE: CUT OUT EACH OF THE FOUR CENTERING REFERENCE MARKS. THE MARKS START ABOUT 1 MM FROM THE F.T.S. AND GO 2 MM BEYOND THE P.S.S. FOR A BLEED. REMEMBER, THE TOP 1/4" WILL NOT PRINT (GRIPPER EDGE, WHAT THE PRESS REQUIRES TO HOLD THE SHEET); YOU MAY ALLOW THE FULL 1/2" TO SHOW ANYWAY.

18. OPAQUE. MAKE A FINAL CHECK FOR STRAIGHTNESS AND ACCURACY. CHECK THAT EVERYTHING WILL PRINT CLEAN, THERE ARE NO NEGATIVES OVERLAPPING, ALL TAPE IS AWAY FROM THE IMAGE, AND EVERYTHING IS SECURE.

19. MAKE A PROOF.

20. ON THE PROOF, DRAW YOUR P.S.S. (IN RED PENCIL) AND THE F.T.S. (IN BLUE PENCIL).

21. HAVE THE INSTRUCTOR CHECK YOUR FLAT AND PROOF FOR ACCURACY AND CHECK WITH YOUR INSTRUCTOR TO FIND OUT WHICH MOD YOU WILL DO NEXT.



graphics

unit: STRIPPING

capital area career center

1401 11 007

module: 1401 11 007 3 **date:** JUNE 1977 **level:**

skill title: MAKING A SIMPLE BREAK FOR COLOR USING RUBYLITH

developed & written by: GLEN PETTIT AND DWIGHT HORNER

visuals by: CYNTHIA ALDERSON

PERFORMANCE OBJECTIVE

YOU ARE GOING TO LEARN:

HOW TO TAKE A SIMPLE AD AND STRIP IT SO IT MAY BE PRINTED IN TWO COLORS (USING A NEGATIVE AND TWO PIECES OF RUBYLITH TO OBTAIN A SIMPLE BREAK FOR COLOR.

AND IN ORDER TO DO THIS YOU WILL NEED:

A LIGHT TABLE
LINE GAUGE AND TRIANGLE
BALL POINT PEN
TAPE (RED AND MASKING)
X-ACTO KNIFE - A SWIVEL BLADE IF AVAILABLE
8 1/2" X 11" MASKING SHEET
2 PIECES OF ULANO RUBYLITH (NOT TO EXCEED 4" X 5" EACH)
A 4" X 5" NEGATIVE WITH A BORDER AD (2" X 3" IMAGE)
SCISSORS
T-SQUARE
GLASS CLEANER

WE WILL KNOW YOU CAN DO IT WHEN:

1. YOU PRODUCE A PLEASING AND ATTRACTIVE TWO-COLOR AD (USING A NEGATIVE AND TWO PIECES OF RUBYLITH EXACTLY POSITIONED AND DESIGNED SO THE PLATES CAN EASILY BE MADE).
2. THE RUBYLITH IS SECURELY FASTENED TO THE FLAT AND EXACTLY CUT SO ONLY THE DESIRED IMAGES WILL APPEAR ON EACH.
3. YOU CAN PRODUCE A SIMPLE 2 COLOR BREAK FROM NEGATIVE TO PLATE IN 30 - 40 MINUTES.

A TAPE OF THIS MODULE IS AVAILABLE.

INFORMATION	MATERIALS	LOCATION OF MATERIALS
RUBYLITH IS A SEPARATE, TWO-LAYER ACETATE FILM WITH RED OR AMBER EMULSION ON A CLEAR BASE. IT HAS DOZENS OF USES IN GRAPHICS, MOSTLY FOR COLOR SEPARATIONS BY HAND IN THE COMPOSITION OR STRIPPING DEPARTMENTS.	8 1/2" X 11" MASKING SHEET	TOP SHELF GEAR TRACK REGISTER LIGHT TABLE
RUBYLITH EMULSION MUST BE CUT WITH HAND TOOLS. IT IS BEST TO CUT WITH A VERY SHARP X-ACTO KNIFE BECAUSE IT WILL TURN CORNERS EASILY. FOR STRAIGHT OR SQUARE CUTTING, A RAZOR BLADE WORKS WELL. THERE IS A SPECIAL "ULANO SWIVEL KNIFE" ($20) AVAILABLE WHICH WORKS BEST FOR FAST, QUICK, SHARP AND TIGHT-TRICKY FILM CUTTING.	2 PIECES OF ULANO RUBYLITH NOT TO EXCEED 4" X 5"	FLAT STORAGE CABINET #1 DRAWER #3
USE THE X-ACTO KNIFE FOR THIS MOD. BE SURE THE BLADE IS NEW OR VERY SHARP AND USE THE SHARPENING STONE. PRACTICE IN THE CORNER OF YOUR RUBYLITH FILM. LITTLE OR NO PRESSURE IS REQUIRED TO CUT. CUT A SMALL BOX, THEN LIFT THE INSIDE EMULSION OFF BY SCRAPING THE CORNER.	4" X 5" NEGATIVE WITH BORDER AD 2" X 3" IMAGE AREA	CLIP AD FROM AN OLD MAGAZINE (BLACK) ALSO, FLAT STORAGE CABINET #2
TO PREVENT MISTAKES AND TO ELIMINATE CONFUSION, RUBYLITH OVERLAYS MUST BE KEYED TO THE ORIGINAL LAYOUT BY SCRATCHING INTO THE EMULSION, THE COLOR OF EACH PARTICULAR OVERLAY.	TAPE (1/2" RED)	TAPE DISPENSER, MOST NEAR LIGHT TABLES

WORD GUIDE

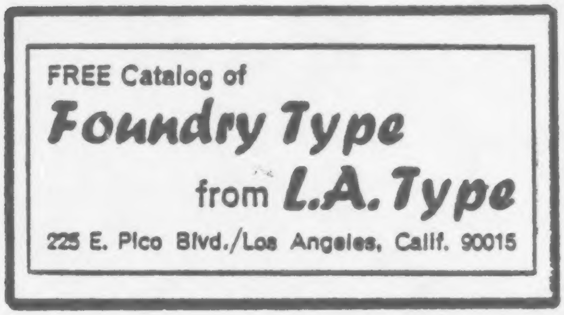
REGISTER MARKS - THERE ARE MANY DIFFERENT MARKS USED FOR REGISTER. THEY MUST SHOW A FINE LINE WHICH USUALLY INTERSECTS. THIS IS TO CHECK REGISTER ON THE PRESS AND MUST APPEAR FOR 3-4 COLOR REGISTER WORK. ON 4-COLOR WORK, EACH COLOR USUALLY HAS AN ADDITIONAL PATCH. REGISTER MARKS ARE BEST IF KEYED ON THE ORIGINAL COPY (HAND DRAWN OR WITH PRE-PRINTED MARKS), BUT THEY CAN BE SCRIBED ON FILM AND TAPED INTO REGISTER POSITION ON THE FLAT.

JOB STEPS

1. TAKE ALL EQUIPMENT AND MATERIALS TO YOUR WORK AREA.

2. SELECT AND CLEAN A LIGHT TABLE.

3. LOOK THROUGH SEVERAL OLD MAGAZINES AND SELECT A SMALL ADVERTISEMENT PRINTED IN ONE COLOR (BLACK) WITH A BORDER AROUND IT (IMAGE NOT TO EXCEED 2" X 3"; LIKE SAMPLE ON RIGHT).



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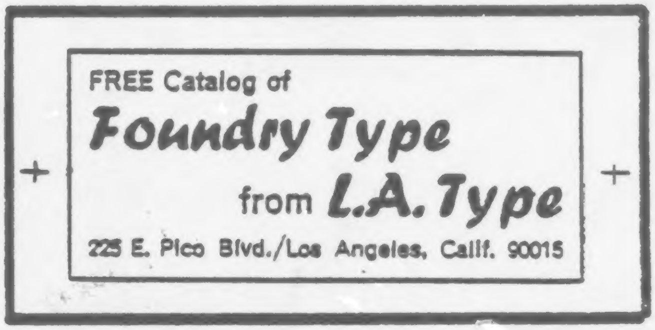
4. PLACE REGISTER MARK ON EACH SIDE (RIGHT AND LEFT) OF YOUR SELECTED AD. IT SHOULD BE CLOSE TO THE IMAGE, (THIN LINES) AND HAND DRAWN. USE PRINTED TAPE OR ELSE IT CAN BE SCRIBED ONTO THE NEGATIVE LATER.



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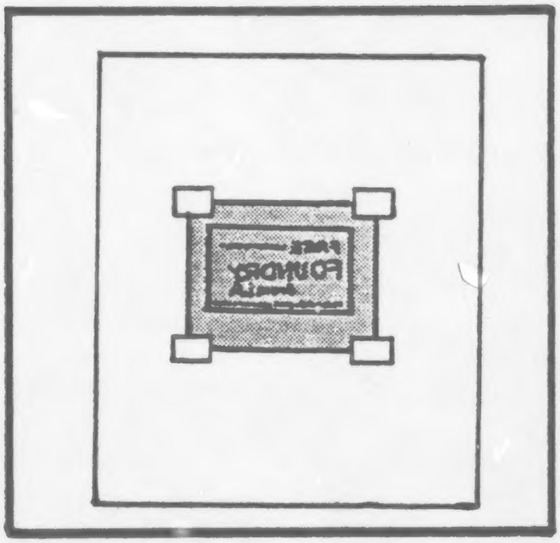
WORD GUIDE

HINGED - THE TAPING OF AN OVERLAY TO THE BASE FLAT ALONG ONLY ONE EDGE OF THE OVERLAY SO IT CAN BE RAISED UP.

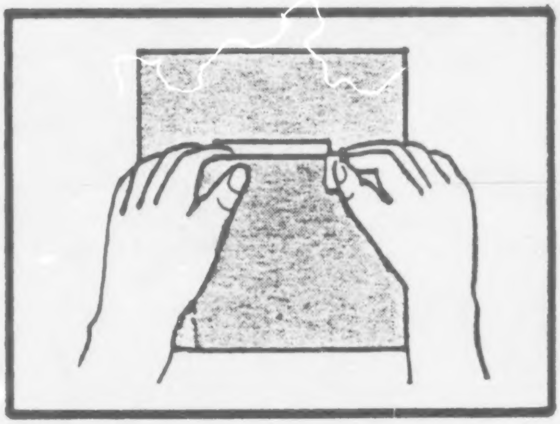
JOB STEPS

5. HAVE YOUR COPY SHOT AND PROCESSED FOR YOU BY SOMEONE IN CAMERA. USE 4" X 5" LINE ORTHO FILM (IMAGE MUST NOT EXCEED 2" X 3").

6. STRIP AND CENTER YOUR 4" X 5" NEGATIVE ON AN 8 1/2" X 11" PIECE OF MASKING PAPER. FOR CONVENIENCE, IN YOUR NOTEBOOK STRIP IT (SEE ILLUSTRATION ON THE RIGHT) WITH THE 5" WAY RUNNING WITH THE 8 1/2" WAY OF THE MASKING SHEET.

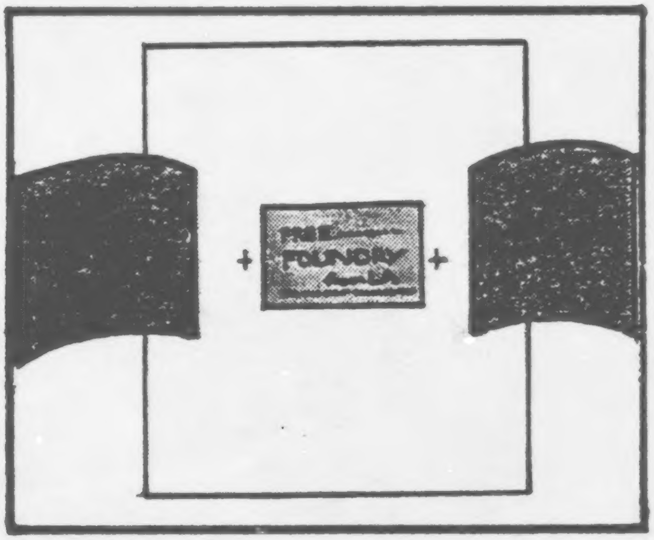


7. TURN YOUR FLAT OVER (SEE ILLUSTRATION ON THE RIGHT) AND CUT OUT YOUR WINDOW, INCLUDING REGISTER MARKS.

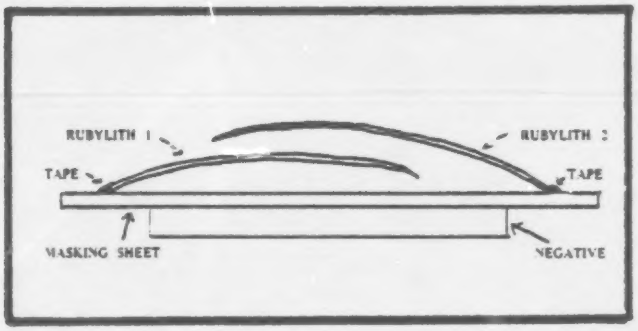


JOB STEPS

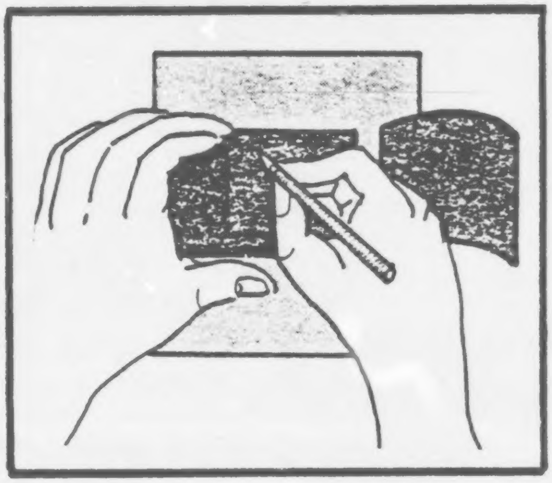
8. HINGE YOUR TWO PIECES OF RUBYLITH WITH 1/2" RED LITHO TAPE TO THE GOLDENROD FLAT ON EACH SIDE OF THE IMAGE(EMULSION SIDE UP). ONE PIECE MUST BE SHORT ENOUGH SO THEY WILL LAY FLAT WHEN OVERLAPPING THE ENTIRE IMAGE.



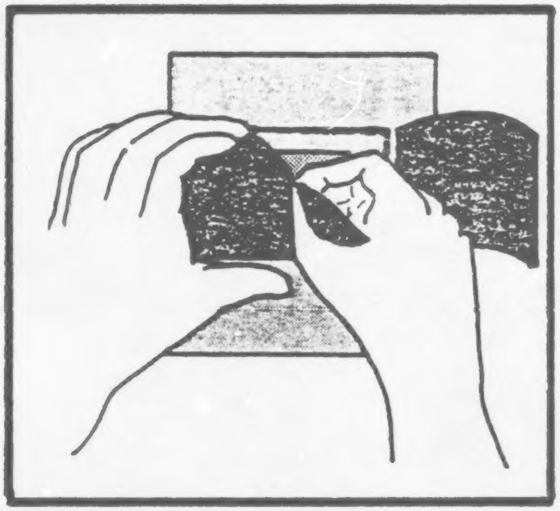
9. DETERMINE WHAT PARTS OF THE IMAGE YOU WANT IN EACH COLOR AND WHICH PIECE OF RUBYLITH WILL BE FOR EACH COLOR.



10. WITH ONLY ONE PIECE OF RUBYLITH (THE OTHER ONE FOLDED BACK) ON THE NEGATIVE, CUT AROUND THE IMAGE AREA FOR THAT COLOR ONLY. STAY 1 - 2 MM FROM THE IMAGE. REMEMBER TO CUT OUT FOR THE 2 REGISTER MARKS.



JOB STEPS



11. REMOVE THE IMAGE AREA EMULSION YOU WANT TO PRINT. IF YOU REMOVE TOO MUCH AND AN UNDESIRED IMAGE SHOWS, COVER THIS WITH RED LITHO TAPE DIRECTLY ON THE RUBYLITH.

12. FOR THE SECOND COLOR, DO THE SAME FOR THE SECOND PIECE OF RUBYLITH.

13. CAREFULLY, CHECK BOTH PIECES TO BE SURE YOU HAVE EXACTLY WHAT YOU WANT ON EACH.

14. YOU HAVE JUST COMPLETED A SIMPLE BREAK FOR COLOR. YOUR NEXT MOD WILL BE #1401 12 007 TO MAKE A COLOR KEY PROOF OF THIS JOB.

graphics

unit: STRIPPING

capital area career center

module: 1401 11 008
1401 11 008 3 date: JUNE 1977 level: ___

skill title: STRIPPING-IN WINDOWS, HALFTONES AND NEGATIVE CORRECTIONS

developed & written by: GLEN PETTIT - REVISED BY DWIGHT HORNER

visuals by: BRUCE BENNETT

WORD GUIDE

WINDOW - A CLEARED AREA IN A NEGATIVE. THIS AREA WILL ALLOW ALL THE LIGHT THROUGH DURING EXPOSURE. THE OPENING ON A MASKING SHEET OVER THE IMAGE AREA OF A NEGATIVE IS ALSO CALLED A WINDOW

TRANSPORT - CARRY FROM ONE PLACE TO ANOTHER

PERFORMANCE OBJECTIVE

YOU ARE GOING TO LEARN:

HOW TO STRIP-IN FOR WINDOWS, STRIP-IN NEGATIVES AND STRIP-IN TYPE CORRECTIONS ON A NEGATIVE.

IN ORDER TO DO THIS YOU WILL NEED:

A LIGHT TABLE (GEAR TRACK)
LINE GAUGE AND TRIANGLE
BALL POINT PEN
X-ACTO KNIFE
RAZOR BLADE
SCISSORS
TAPE (RED & MASKING)
PLATEBURNER
A BASIC NEGATIVE FOR THE JOB
THREE HALFTONE NEGATIVES
TWO TYPE CORRECTION NEGATIVE
8 1/2" X 11" MASKING SHEET
8 1/2" X 11" SILVERPRINT PAPER
GLASS CLEANER
OPAQUE BRUSH
OPAQUE

WE WILL KNOW YOU CAN DO IT WHEN:

1. CORRECTIONS ARE STRIPPED-IN STRAIGHT, FLAT, WITHOUT ANY OVERLAP, IN EXACTLY THE RIGHT POSITION, WITHIN 1/8" OF ANOTHER IMAGE AREA WITH NO UNNECESSARY LINES OR MARKS SHOWING ON THE PROOF.

2. THE CORRECTIONS ARE FINISHED IN A REASONABLE TIME AND WILL NOT INTERFERE WITH THE HANDLING OF THE FLAT IN TRANSPORT TO PLATEMAKING.

A TAPE OF THIS MODULE IS AVAILABLE.

WORD GUIDE

DISCARD - THROW AWAY; GET RID OF

INFORMATION

IT IS ALWAYS EASIER TO MAKE CORRECTIONS BEFORE THE COPY GETS TO THE CAMERA BUT SOMETIMES IT IS NECESSARY TO MAKE THEM ON THE NEGATIVES. ON MANY FORMS ONLY A DATE, TIME, ADDRESS, OR PRICE CHANGE MIGHT BE NECESSARY. IF A LARGE PLATE REQUIRES CHANGES IN ONLY A SMALL AREA, IT IS WISE AND VERY ECONOMICAL TO MAKE A NEGATIVE CORRECTION ON THE OLD FLAT, RATHER THAN COMPLETELY RE-STRIPPING OR RE-SHOOTING THE ENTIRE JOB. BE SURE THE NEW CORRECTION NEGATIVE IS THE SAME DENSITY AS THE OLD NEGATIVE.

IN THIS MOD, YOU WILL BE USING THE SECOND METHOD LISTED BELOW (STRIPPING-IN WINDOWS). IF THE WORK ONLY HAS ONE HALFTONE, MOST STRIPPERS WILL USE THIS METHOD. IF MANY HALFTONES ARE REQUIRED, THE THIRD (DOUBLE-BURN) METHOD IS BEST.

THE NEGATIVE GIVEN FOR THIS MOD REQUIRES FIVE CORRECTIONS: ONE LINE COPY, TWO DRAWINGS AND TWO HALFTONES. STRIPPING-IN CAN BE VERY EASY IF YOU ARE CAREFUL. THE TWO MAIN RULES TO REMEMBER ARE:

1. AM I STRAIGHT OR IS THIS THE RIGHT POSITION?
2. WHERE IS MY IMAGE AREA?

THE PROBLEM IN NEGATIVE CORRECTIONS ARE USUALLY FROM GETTING TOO CLOSE TO THE IMAGE AREAS, HAVING TAPE COVER THE IMAGE, OR INCORRECT POSITIONING.

THERE ARE THREE METHODS FOR PUTTING IN A NEGATIVE CORRECTION:

1. CLEAR THE OLD NEGATIVE IN THE AREA WHERE THE CORRECTION SHOULD BE (AS YOU WILL LEARN IN MOD #1401 11 009/1401 009 401 11 009 3) AND PLACE THE NEW NEGATIVE ON TOP OF THE OLD, FOR EXPOSURE. THIS IS FAST AND SIMPLE BUT GIVES POOR REPRODUCTION QUALITY.

2. PLACE THE NEW NEGATIVE CORRECTION DIRECTLY OVER THE POSITION IT REPLACES. THEN, WITH A NEW, SHARP, RAZORBLADE CUT THROUGH BOTH NEGATIVES AT THE SAME TIME. REMOVE THE OLD NEGATIVE AND DISCARD IT. THE NEW CORRECTION WILL FIT EXACTLY INTO THE OLD SLOT. THIS IS QUICK, REQUIRES SKILL, GIVES EXCELLENT QUALITY AND GUARANTEES POSITION.

3. REMOVE THE OLD NEGATIVE AREA AND, WITH SCISSORS, TRIM THE NEW NEGATIVE TO FIT INTO THE HOLE SO IT IS IN THE RIGHT POSITION. WHILE THIS SOUNDS EASY, THE PROBLEM IS TO GET THE EXACT POSITION AND KEEP THE NEW NEGATIVE THERE WHILE YOU CAN TAPE IT INTO POSITION. IT GIVES GOOD QUALITY BUT CAN CREATE MANY PROBLEMS.

WORD GUIDE

INSERTION - PROCESS OF PUTTING SOMETHING INTO, OR INSIDE OF, SOMETHING ELSE

JOB STEPS

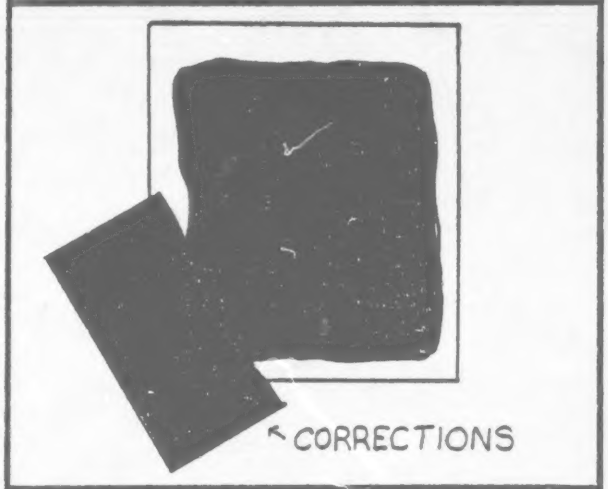
1. TAKE ALL EQUIPMENT AND MATERIALS TO YOUR WORK AREA.

2. SELECT AND CLEAN A LIGHT TABLE (GEAR TRACK).

3. GET THE NEGATIVE FOR STRIPPING PROJECT #008: "STRIPPING-IN..." AND EXAMINE IT CAREFULLY. THE PAGE ON THE RIGHT 2/3 IS THE ACTUAL PROJECT PAGE AND THE CORRECTIONS TO BE STRIPPED-IN ARE ON THE LEFT 1/3.

4. REMOVE THE PORTION OF THE NEGATIVE WHICH CONTAINS THE NEGATIVE CORRECTIONS (LEFT 1/3). NOTICE THAT THERE ARE FIVE CORRECTIONS TO BE STRIPPED-IN.

5. STRIP-UP THE PROJECT PAGE TO AN 8 1/2" X 11" MASKING SHEET CENTERED. THEN, CUT YOUR WINDOWS.



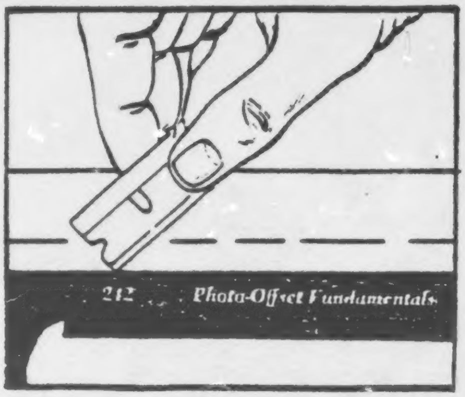
NOTE: DO NOT OPAQUE UNTIL ALL CORRECTIONS ARE FINISHED.

6. THE FIRST CORRECTION: CHANGE THE PAGE NAME TO "PHOTO-OFFSET FUNDAMENTALS" THIS WAY;
   A. CAREFULLY REMOVE THE OLD PORTION OF THE NEGATIVE WITH SCISSORS OR A SHARP RAZOR BLADE (IT HELPS TO CUT STRAIGHT LINES, USING THE GEAR-TRACK WITH THE FLAT SECURELY TAPED TO THE TABLE).

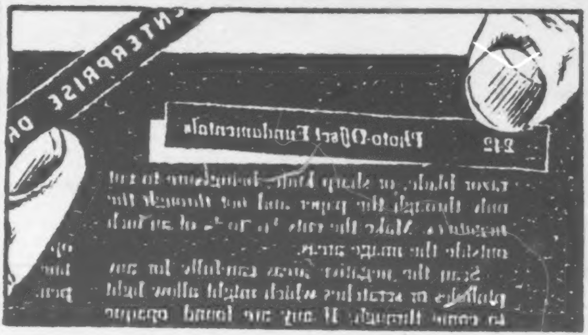
ENTERPRISE DRIVE
razor blade, or sharp knife, being sure to cut

JOB STEPS

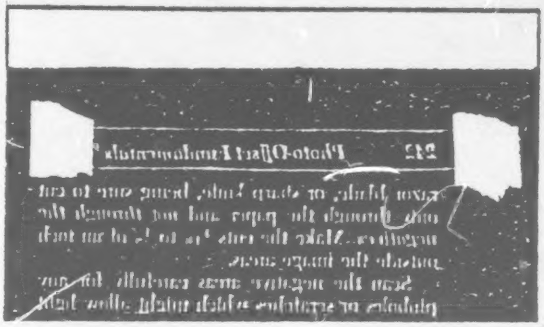
6. B. PREPARE THE NEW NEGATIVE FOR INSERTION; CUT IT STRAIGHT AND, IF YOU CAN, CUT IT EXACTLY THE SAME SIZE SO IT WILL FIT IN EASILY.



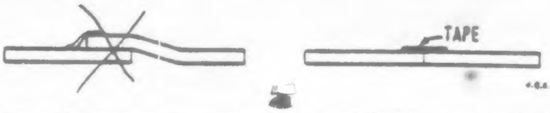
C. INSERT THE NEGATIVE (YOU CAN DO NEGATIVE CORRECTIONS FROM EITHER THE BASE OR EMULSION SIDES).



D. ON THE EMULSION SIDE, TEMPORARILY TAPE THE NEW CORRECTIONS IN PLACE WITH MASKING TAPE (ALL CORRECTIONS GENERALLY ARE DONE THIS WAY BEFORE FLIPPING THE FLAT TO THE BASE SIDE TO PUT RED LITHO TAPE ON THE BASE SIDE).



7. CHECK YOUR NEGATIVE CAREFULLY. BE SURE THAT NO NEGATIVE IS RESTING ON TOP OF ANY OTHER AND THAT ALL NEGATIVES ARE JUST SHORT OR SLIGHTLY UNDERSIZE AND WILL FIT INTO THE OLD NEGATIVE EASILY.

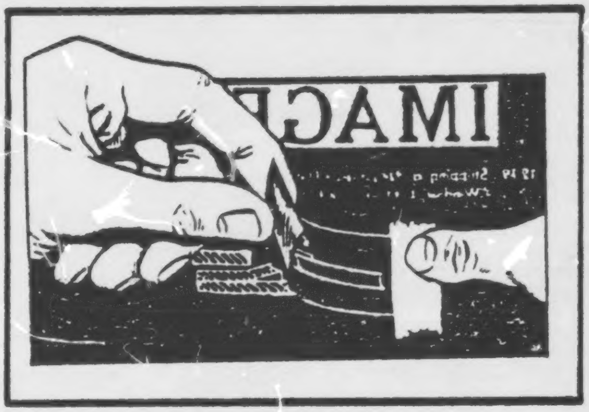


NOTE: ANY BUILDUP (INCLUDING SEVERAL LAYERS OF TAPE ON EACH OTHER) WILL PREVENT TIGHT CONTACT IN PLATEMAKING AND CAUSE A BOLD BLUR ON THE PLATE AND ON PRINTED COPIES.

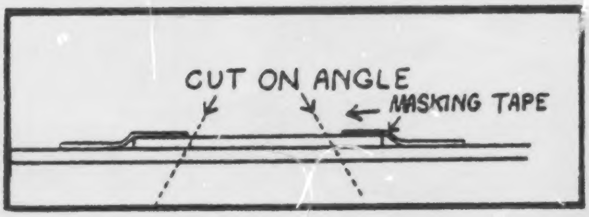
JOB STEPS

8. THE SECOND CORRECTION: THE DRAWING FOR FIG. 12-20 (WITHOUT THE "X") ON THE RIGHT;

A. WITH EMULSION UP ON BOTH ORIGINAL NEGATIVE AND CORRECTION NEGATIVE, LAY THE CORRECTION NEGATIVE DIRECTLY OVER THE OLD IMAGE AND TAPE IT TEMPORARILY WITH MASKING TAPE ON ALL FOUR SIDES.

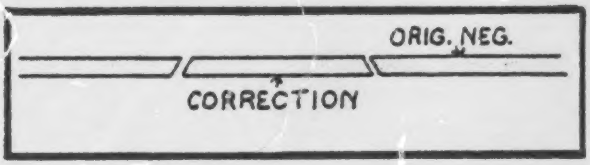


8. B. WITH A SHARP RAZOR BLADE, CUT THROUGH BOTH THE OLD AND NEW NEGATIVES AT THE SAME TIME. (TRY TO CUT STRAIGHT LINES AND ANGLE THE BLADE OUT SO THE BOTTOM HOLE WILL BE SLIGHTLY LARGER THAN THE NEW PIECE). STAY 1/8" TO 1/4" AWAY FROM THE IMAGE AREA AT ALL TIMES.



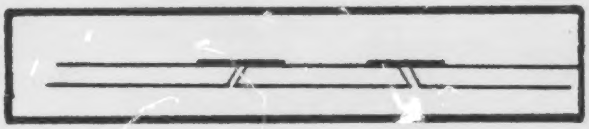
C. REMOVE ALL MASKING TAPE.

D. REMOVE OLD NEGATIVE AND INSERT THE NEW CORRECTION. SOMETIMES THE PLASTIC BASE MAY "FRAY" OR LEAVE SLIVERS. TRIM THESE OFF WITH THE RAZOR BLADE.



NOTE: BE SURE THAT ALL SHAVINGS AND TRIM ARE REMOVED FROM THE TABLE AS THEY CAN BLOCK OUT DESIRED IMAGE AREAS, IF THEY GET INTO THE WRONG PLACES.

E. TAPE IN THE NEW CORRECTION WITH 1/4" RED LITHO TAPE SO APPROXIMATELY 1/2 THE WIDTH OF THE TAPE IS OVERLAPPING EACH NEGATIVE.



F. CHECK YOUR ACCURACY AND STRAIGHTNESS OF IMAGE. MAKE SURE YOU HAVE NOT TAPED OVER ANY IMAGE AREA.

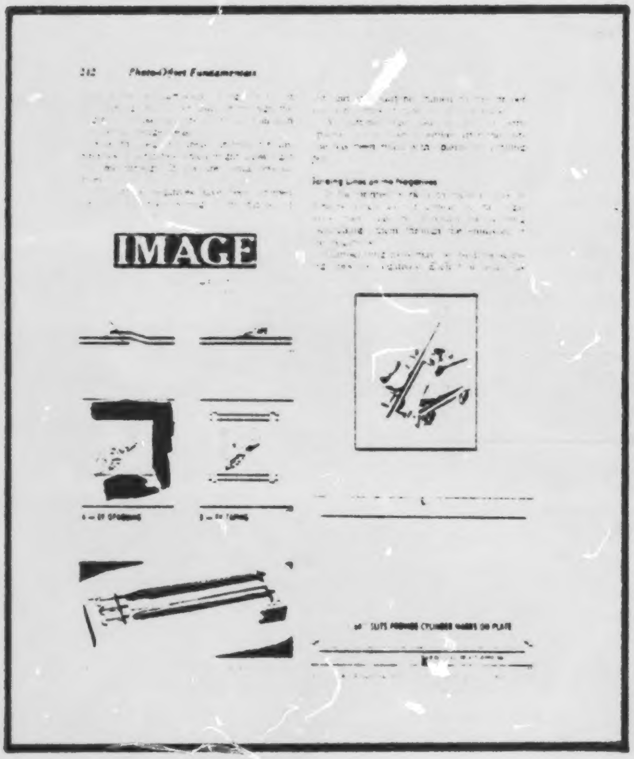
WORD GUIDE

CLARITY - CLEARNESS

JOB STEPS

9. MAKE THE THIRD, FOURTH, AND FIFTH CORRECTIONS BY EITHER OF THE TWO METHODS YOU HAVE JUST USED (DO NOT USE THE SAME METHOD FOR ALL THREE).

10. WHEN ALL CORRECTIONS ARE CHECKED FOR ACCURACY, SQUARENESS, POSITION AND CLARITY, OPAQUE THE NEGATIVE AND PULL A SILVERPRINT PROOF.



11. HAVE THE INSTRUCTOR/MANAGER CHECK YOUR WORK AND THEN MOUNT THE NEGATIVE AND PROOF IN YOUR NOTEBOOK.

12. BE SURE YOUR ENTIRE WORK AREA IS CLEAR AND CLEAN.

NOTE: YOU WILL LEARN TO STRIP-IN NEGATIVES IN THE NEXT MOD (#1401 11 009/1401 11 009 3, "SCRIBING RULES, BORDERS, BOXES AND WINDOWS").

graphics

unit: STRIPPING

capital area career center

1401 11 009
module: 1401 11 009 3 **date:** 6/77 **level:**

skill title: SCRIBING RULES, BORDERS, BOXES, AND WINDOWS

developed & written by: GLEN PETTIT - REVISED BY DWIGHT SMITH

visuals by: CHUCK KNOCK

WORD GUIDE

SCRIBING - REMOVING A PART OF THE NEGATIVE EMULSION TO PRODUCE A CLEAR AREA (USUALLY FOR THIN, FINE LINES).

EMULSION - COATING ON SURFACE OF PHOTOGRAPH.

PERFORMANCE OBJECTIVE

YOU ARE GOING TO LEARN:

HOW TO ACCURATELY SCRIBE LINES, BOXES, AND WINDOWS FOR THIS JOB (INFORMATION CARD).

IN ORDER TO DO THIS YOU WILL NEED:

- A LIGHT TABLE
- LINE GAUGE AND TRIANGLE
- SCISSORS
- T-SQUARE
- TAPE (RED & MASKING)
- ROMSEY FILM LINE SCRIBERS (SET OF THREE)
- OPAQUE BRUSH
- OPAQUE & FIXER
- NEGATIVES: PROJECT 9
- 5½" X 8½" SILVERPRINT PAPER
- EMULSION REMOVER (CLOROX)
- Q-TIPS
- SOME SCRAP NEGATIVES
- PLATEBURNER
- EXPOSURE GUIDE
- GLASS CLEANER

WE WILL KNOW YOU CAN DO IT WHEN:

1. YOU HAVE ACCURATELY AND PROPERLY SCRIBED ALL LINES, BOXES, AND WINDOWS.
2. YOUR LINE THICKNESS IS UNIFORM, CORRECT LENGTH, AND PROPERLY POSITIONED WITHIN 1 MM OF ACCURACY.
3. THE SILVERPRINT PROOF IS CLEAN AND LINES ARE SHARP, SQUARE, AND UNIFORM.

A TAPE OF THIS MODULE IS AVAILABLE.

WORD GUIDE

VERTICALLY - UP AND DOWN, TOP TO BOTTOM.

INFORMATION

THE BEST QUALITY LINES ARE PRODUCED ON THE OPAQUE NEGATIVE BY SCRIBING (REMOVING A UNIFORM LAYER OF THE EMULSION). FREQUENTLY, ON A TABULAR FORM ESPECIALLY, A PASTE-UP HAS MANY SMALLER PIECES AND A UNIFORM LINE CANNOT BE DRAWN ON THIS PASTE-UP. SO IT MUST BE SCRIBED.

WE USE THE "RAMSEY FILM-LINE SCRIBERS", CONSISTING OF THREE TOOLS, (GREEN-THIN, GRAY-MEDIUM, YELLOW-BOLD) WITH A FINELY SHARPENED SPRING STEEL LOOP FOR CUTTING. THIS LOOP HAS A RED NOTCH ON THE LOWER END OF THE HANDLE WHICH SHOULD BE UP SO THE CUTTING EDGE WILL CUT PROPERLY. ONLY ONE SIDE OF THE LOOP IS RAZOR SHARP; THE OTHER SIDE OF THE LOOP WILL SCRAPE A ROUGH EDGE AND TEAR THE EMULSION. IF THE SCRIBER IS DROPPED ON THIS SPRING STEEL LOOP, IT MAY SHATTER AND BREAK.

A NEGATIVE IS APPROXIMATELY 85% CLEAR PLASTIC BASE AND ONLY 15% SOFT EMULSION. YOU ARE ONLY REMOVING ABOUT .001" EMULSION. ONLY A LITTLE PRESSURE IS NEEDED BECAUSE THE CUTTING EDGE OF THE SCRIBER IS RAZOR SHARP.

IF YOU HAVE A DIRTY NEGATIVE (A LOT OF PIN HOLES) THAT YOU MUST USE AND THERE ARE A LOT OF LINES TO BE SCRIBED, YOU MAY USE A THIN OPAQUE ON THE EMULSION SIDE, KEEPING AT LEAST 2-3 MM AWAY FROM THE IMAGE. WHEN DRY, SCRIBE AS YOU NORMALLY WOULD. THE SCRIBER WILL EASILY CUT THROUGH THE EMULSION AND THE OPAQUE.

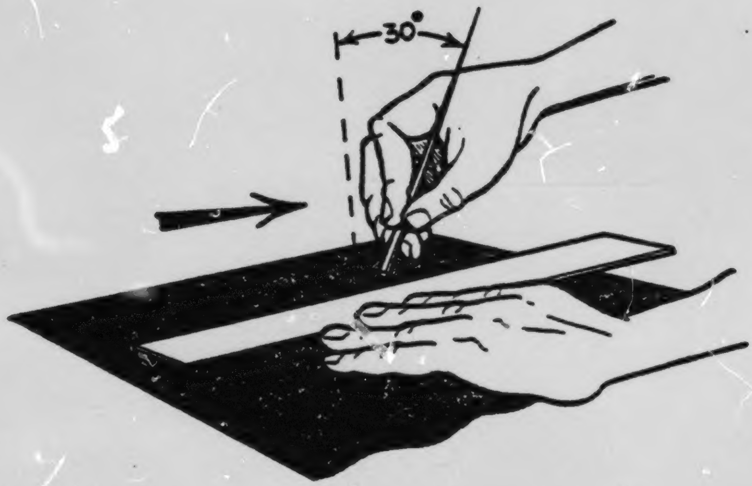
IF YOU HAVE ENOUGH ROOM, SCRIBE ALL YOUR LINES LONGER THAN NEEDED ON A FORM. THEN, ON THE TOP (BASE) SIDE OF THE NEGATIVE, USE TAPE OR OPAQUE TO START AND FINISH ALL THE LINES STRAIGHT AND VERTICALLY.

WORD GUIDE

FUME - ODOR, SMELL
INHALING - BREATHING IN
VARY - CHANGE
CONSISTENT - ALWAYS THE SAME
PREVENT - STOP FROM HAPPENING
30° ANGLE - THIRTY DEGREES: A COMPLETE CIRCLE IS 360°, 1/12 OF THIS IS 30°.

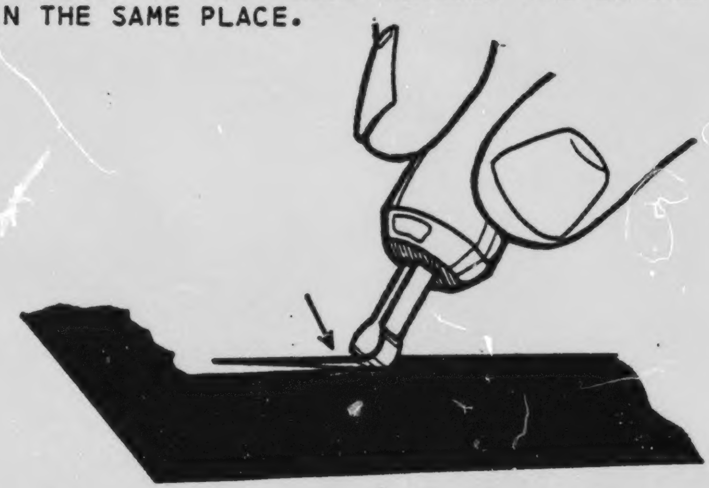
INFORMATION

THE SCRIBER IS HELD STRAIGHT ABOVE THE LINE OF WORK BUT IS TILTED ABOUT 30° IN THE DIRECTION OF PULL. ALWAYS PULL THE TOOL TOWARD YOU OR TO THE PULLING HAND (RIGHT HANDED PULLS TO THE RIGHT). IT IS BEST TO ALWAYS USE A METAL STRAIGHT EDGE, RULER, OR METAL ANGLE AS A GUIDE, BECAUSE PLASTIC MAY HAVE A NICKED OR CHIPPED EDGE. ALWAYS USE A CONSISTANT OR LIGHT PRESSURE WHEN PULLING. DO NOT VARY THE PRESSURE AS THIS WILL CHANGE THE THICKNESS OF THE LINE. FOR LONGER LINES (3-4" LONG), MOVE YOUR ENTIRE BODY AS YOU SCRIBE THE LINE. MOVING ONLY YOUR ARM WILL CHANGE THE PRESSURE CONSIDERABLY. SHIFTING YOUR BODY ON YOUR FEET HAS NO REAL EFFECT ON THE LINE. BE SURE YOUR GUIDE DOES NOT MOVE. ONCE YOU START A LINE, DO NOT STOP - IT IS VERY DIFFICULT TO START EVENLY AGAIN. OFTEN, THE FIRST AND LAST 3 MM OF A LINE ARE A LITTLE HEAVY. PRACTICE WILL PREVENT THIS COMMON ERROR.

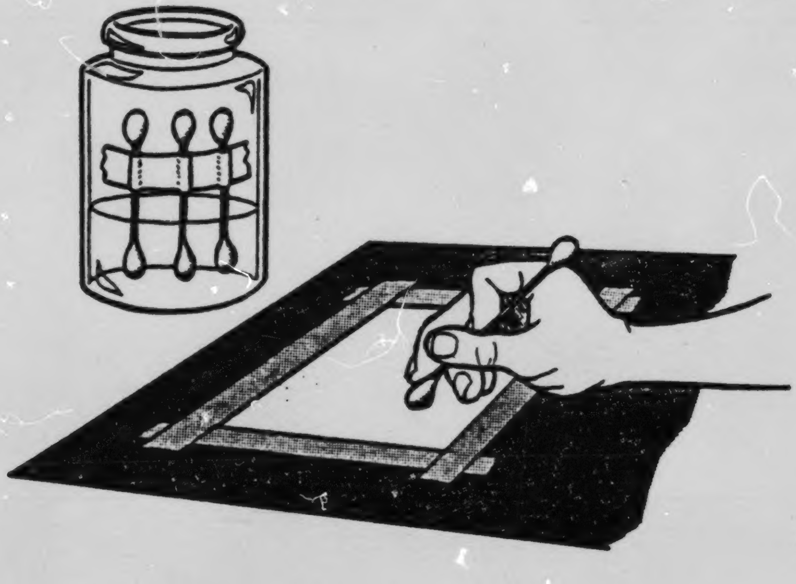


INFORMATION

IN CLEARING A LARGE AREA, YOU WOULD USE THE BOLD YELLOW SCRIBER. BE CAREFUL THAT YOU DO NOT TAKE OUT TOO MUCH OF THE BASE. IT IS EASY TO CUT CLEAR THROUGH THE ENTIRE NEGATIVE WHEN SCRIBING IN THE SAME PLACE.



TO CLEAR LARGE SOLID AREAS, IT IS BEST TO USE A FILM REMOVER LIKE CLOROX. REMEMBER - THIS HAS A STRONG FUME SO AVOID INHALING DIRECTLY OR USING TOO MUCH. CLOROX IS A BLEACH AND WILL TURN CLOTHES WHITE IF SPILLED. USE ONLY A LITTLE AT A TIME, DO NOT LET IT DRIP AND BE CAREFUL THE CONTAINER DOES NOT SPILL (THE LEVEL SHOULD ONLY BE ABOUT 1/2" FULL). HOLD Q-TIPS ON THE SIDE OF THE CLOROX JAR. THEY MAY BE RE-USED SO SAVE YOUR Q-TIP, IF IT IS STILL CLEAN.



INFORMATION

BE SURE TO THROW AWAY THE SCRIBING EMULSION SHAVINGS (MASKING TAPE PICKS THEM UP EASILY). WHEN FINISHED, GENTLY BRUSH OFF YOUR FLATS OR NEGATIVES TO CLEAR ANY REMAINING FINE SHAVINGS.

THERE SHOULD BE ENOUGH EXTRA SCRAPS ON THE SIDES OF THE NEGATIVES FOR THIS PROJECT TO USE FOR PRACTICE SCRIBING.

WORD GUIDE

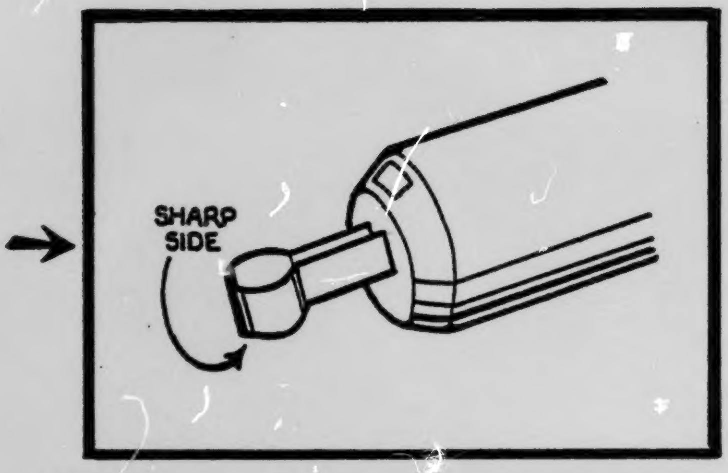
EXAMINE - STUDY CLOSELY

JOB STEPS

1. TAKE ALL EQUIPMENT AND MATERIALS TO YOUR WORK AREA.

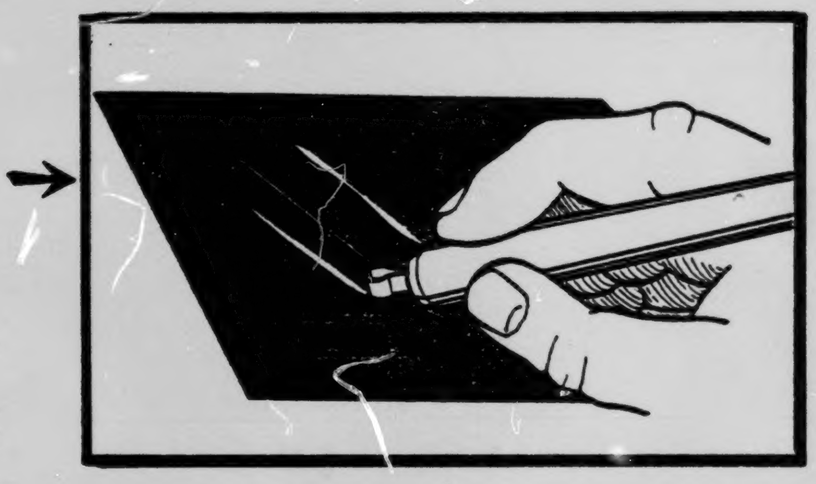
2. CHOOSE AND CLEAN A LIGHT TABLE.

3. LOCATE THE SET OF RAMSEY FILM LINE SCRIBERS AND EXAMINE ALL THREE CAREFULLY. NOTE THE NOTCH AND THE SHARPENED SIDE OF THE SPRING STEEL LOOP.



4. ON SOME SMALL SCRAP PIECES OF OPAQUE FILM, PRACTICE SCRIBING SOME LINES. DRAW SOME THIN PENCIL LINES AND BOXES. THEN, TRY TO SCRIBE ON THESE PENCIL LINES EXACTLY, STARTING AND STOPPING WHERE YOU WANT.

5. ON A SCRAP NEGATIVE, MAKE SEVERAL LONG SCRIBE LINES BUT VARY THE PRESSURE AND THE ANGLE OF THE SCRIBER. NOTE THE DIFFERENCE IN THICKNESS.



6. NOW, PRACTICE SCRIBING THROUGH IMAGE AREAS ON THE SCRAP NEGATIVE:

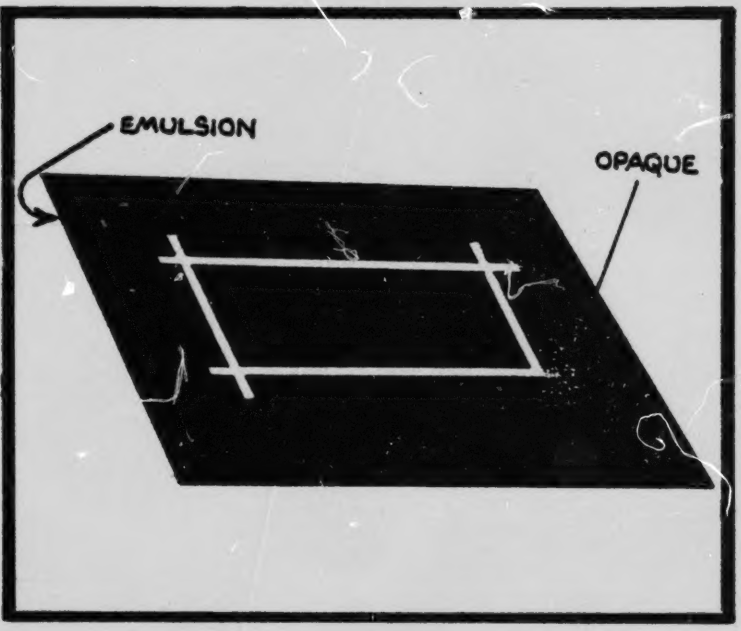
A. SCRIBE A 2" LINE THROUGH THE IMAGE AREA ON THE EMULSION SIDE. THEN, ON THE BASE SIDE, USE 1/4" RED LITHO TAPE TO BLOCK OUT THE UNWANTED IMAGE AREA ON EACH SIDE OF YOUR LINE. BE CAREFUL THAT YOU DO NOT PULL THE TAPE TOO HARD AND STRETCH IT AS IT WILL WRINKLE AND SHRINK LATER.

B. FIRST, OPAQUE-OUT A ¼" X 2" AREA ON THE EMULSION SIDE OF THIS SCRAP NEGATIVE. BRUSH ON THE OPAQUE THINLY (SPEED DRYING BY WARMING ON THE PLATE RUB-UP TABLE; USE THE "HEAT/AIR" SWITCH). WHEN DRY, SCRIBE YOUR LINE THROUGH THIS AREA AND EXAMINE IT.

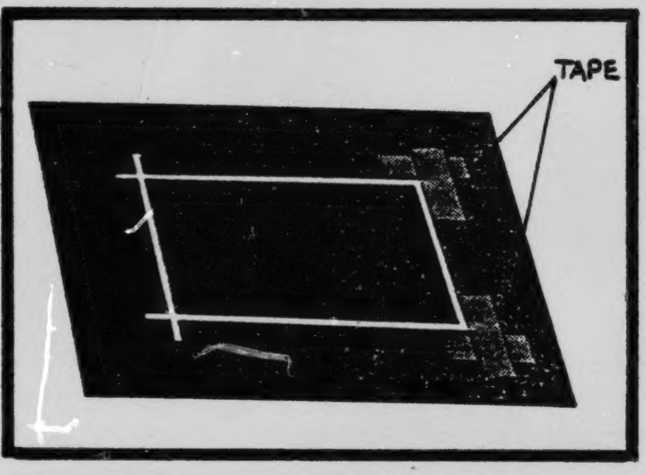
JOB STEPS

BOTH OF THESE METHODS WILL ELIMINATE THE EXPOSURE GUIDE IF THE CAMERA OPERATOR PLACES IT IN THE WRONG AREA.

7. PRACTICE WITH SOME MORE SQUARES ON THE SCRAP NEGATIVE. MAKE YOUR LINES TOO LONG SO THEY OVERLAP AND THEN OPAQUE SOME TO MAKE THE BOX NEAT.

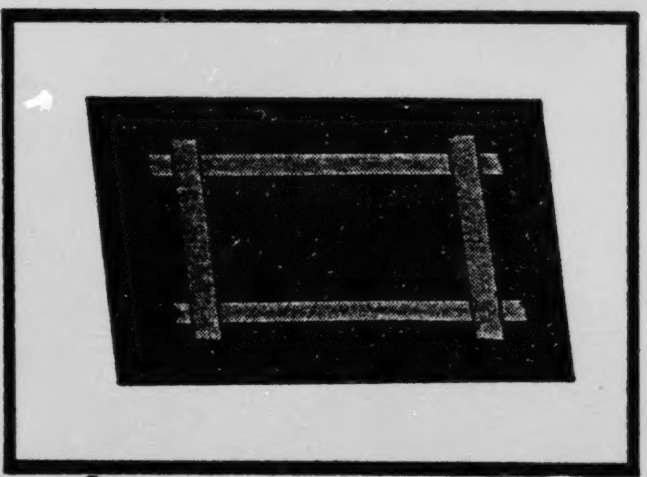


8. THEN, USE RED LITHO TAPE TO TAPE THE CORNER. CUT THE TAPE SO ONLY THE DESIRED IMAGE WILL SHOW.



9. PRACTICE CLEARING A SMALL AREA ON THE SCRAP NEGATIVE BY USING A LOT OF OVERLAPPING SCRIBE LINES.

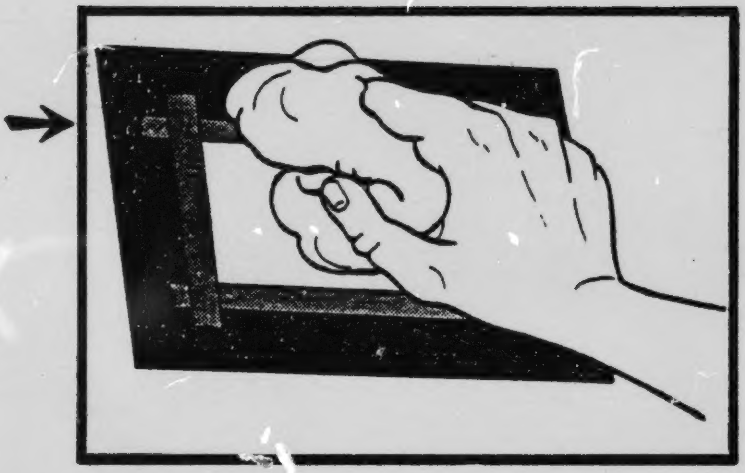
10. PRACTICE CLEARING A SMALL AREA ON THE SCRAP NEGATIVE BY USING CLOROX. TAPE ½" RED LITHO TAPE ON THE EMULSION SIDE, MAKING A COMPLETE BORDER AROUND THE AREA YOU WANT CLEARED. BE SURE THE INSIDE EDGE IS DOWN TIGHT SO THE LIQUID WILL NOT SEEP UNDER.



JOB STEPS

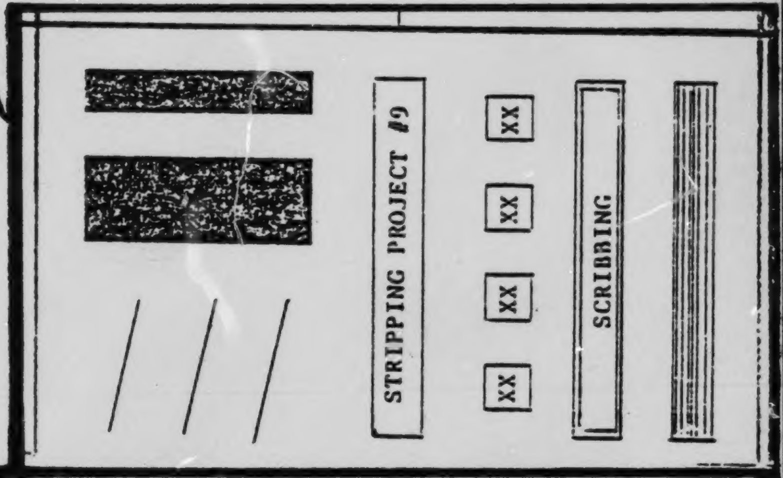
11. USING THE CLOROX ON A Q-TIP, GENTLY START RUBBING THIS AREA. IN A FEW WIPES, THE OPAQUE EMULSION WILL DISSOLVE CLEAR.

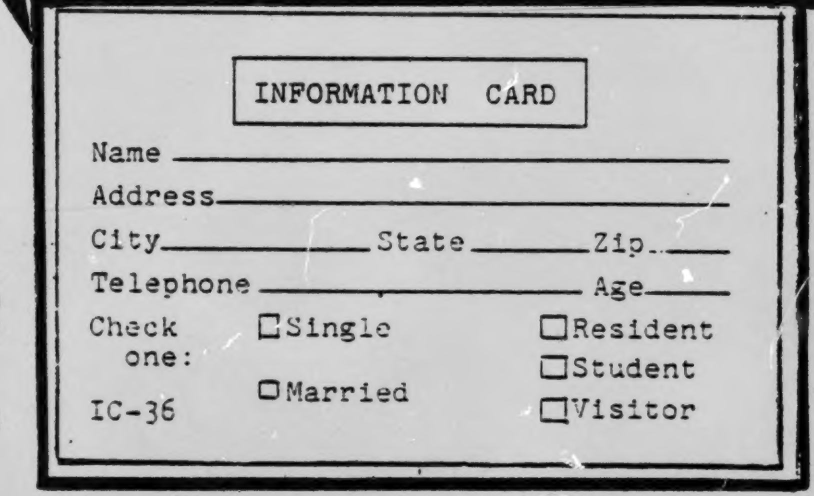
12. WHEN CLEARED, WIPE THE AREA WITH A SLIGHTLY MOIST COTTON PAD OR PIECE OF RAG. WHEN DRY, REMOVE THE TAPE.



13. GET THE NEGATIVE FOR STRIPPING PROJECT #9: "SCRIBING".

NOTE: THERE ARE TWO HALVES TO THIS 5 X 6" NEGATIVE; THE TOP HALF CONSISTS OF SEVEN EXERCISES AND THE BOTTOM HALF IS A SAMPLE COMMON SCRIBBING JOB (SEE INFORMATION CARD).





INFORMATION CARD

Name ____________________

Address ____________________

City ____________ State ________ Zip ______

Telephone ____________ Age ______

Check one: ☐Single ☐Married ☐Resident ☐Student ☐Visitor

IC-36

14. USING THE TOP PORTION OF THIS NEGATIVE (IT DOES NOT HAVE TO BE CUT APART), TAPE IT STRAIGHT AND TIGHTLY TO THE LIGHT TABLE, EMULSION SIDE UP (THE ILLUSTRATION SHOWS WHAT THE COMPLETED EXERCISE WILL LOOK LIKE).

A. A 1/4" IN FROM THE THREE SIDES OF THE LARGE BORDER, SCRIBE EIGHT FINE LINES, ALL WITHIN A 1/4" THICK COLUMN, 2" HIGH.

B. AROUND THE WORD SCRIBING, SCRIBE A FINE 1/4" X 2" BOX SO THE WORD IS CENTERED. THEN, WITHIN THIS, SCRIBE ANOTHER FINE LINE BOX AS CLOSE TO THE FIRST BOX AS POSSIBLE WITHOUT TOUCHING IT.

C. THERE ARE FOUR PAIRS OF XX'S. SCRIBE A BOLD 1/4" BOX AROUND EACH OF THE FOUR XX'S SO THEY ARE CENTERED IN THE BOXES.

D. SCRIBE A MEDIUM 1/4" X 2" BOX CENTERED AROUND THE WORDS, "STRIPPING PROJECT #9".

JOB STEPS

WORD GUIDE

EXPOSURE GUIDE	THIS IS A SCALE OR GUIDE THE CAMERAPERSON USES TO AID IN PROCESSING FILM.
PERMANENT	ONE WHICH LASTS A LONG TIME; THE FINAL ONE.

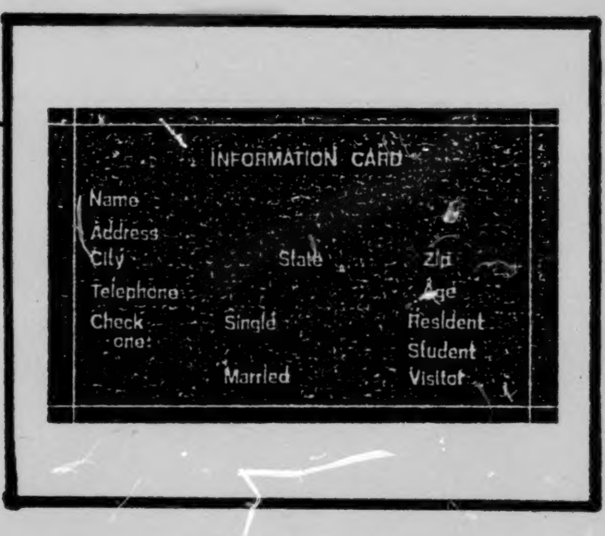
E. USING THE RAMSEY FILM SCRIBERS, SCRIBE A CLEAR AREA 1/4" X 1". THIS SHOULD BE 1/4" FROM THE TWO SIDES OF THE LARGE BORDER IN THE UPPER LEFT CORNER.

F. USING THE RED LITHO TAPE AND EMULSION REMOVER, CLEAR A LARGE AREA: 1 CM X 2½ CM. THIS AREA SHOULD BE 1/4" FROM THE LEFT LARGE BORDER, 3/4" FROM THE TOP LARGE BORDER (1/4" FROM THE CLEAR AREA IN PART E).

G. THE GRAY SCALE OR EXPOSURE GUIDE HAS BEEN LEFT IN AREA SEVEN, SO YOU ARE TO SCRIBE THREE LINES THROUGH THIS AREA. MAKE TWO LINES USING THE OPAQUE METHOD AND ONE USING THE RED TAPE METHOD.

WHEN YOU HAVE COMPLETED THIS FIRST EXERCISE AND DOUBLE-CHECKED YOURSELF, GO ON WITH THE SECOND HALF.

15. THIS IS AN EXAMPLE OF A COMMON SIMPLE SCRIBING JOB. SCRIBE A 3/8" X 2" BOX AROUND THE TITLE "INFORMATION CARD" USING THE MEDIUM SCRIBER.



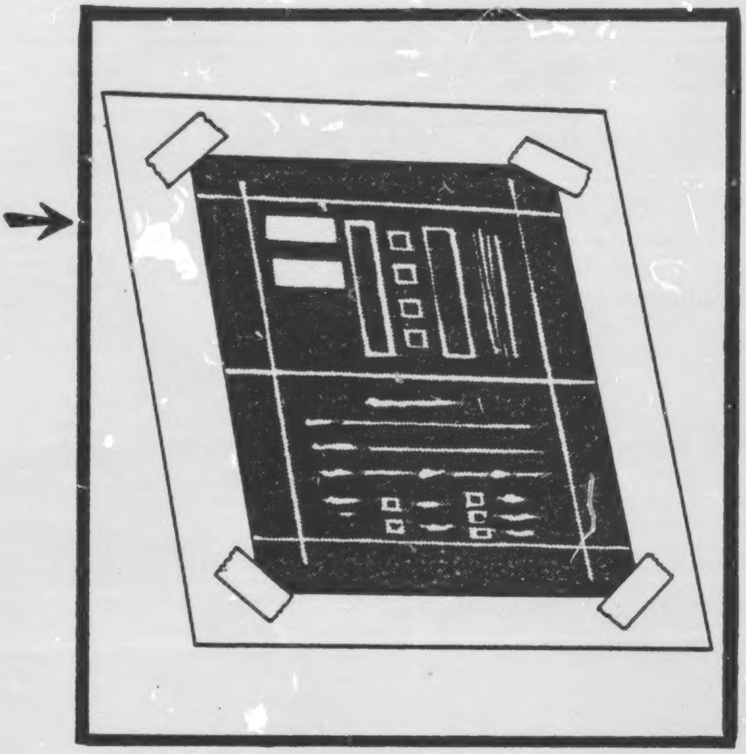
16. SCRIBE IN THE FINE LINES TO COMPLETE THE FOUR INFORMATION LINES (THE SCRIBED LINES SHOULD STAY 1 MM FROM WORDS AND NOT EXCEED A TOTAL OF 3½" WIDE FOR THE ENTIRE INFORMATION GROUP).

17. SCRIBE FIVE, FINE-LINE BOXES, ABOUT 1/8" SQUARE NEAR THE BOTTOM, IN FRONT OF EACH WORD UNDER "CHECK ONE" CATEGORY.

JOB STEPS

18. MAKE ANY NECESSARY CORRECTIONS ON BOTH EXERCISES.

19. PLACE BOTH NEGATIVE PROJECTS ON A PIECE OF 5½" X 8½" SILVERPRINT PAPER. EXPOSE AND PROCESS FOR A PERMANENT PROOF.



20. TAPE THE NEGATIVES TO A PIECE OF 8½" X 11" #20 BOND AND THE SILVERPRINT TO ANOTHER PIECE FOR YOUR NOTEBOOK.

21. ASK YOUR INSTRUCTOR/MANAGER TO CHECK YOUR WORK.

graphics

unit: STRIPPING

capital area career center

module: 1401 11 010
1401 11 010 3 date: JUNE 1977 level:

skill title: STRIPPING FOR SCREEN TINTS AND DOUBLE BURNS

developed & written by: GLEN PETTIT - REVISED BY DWIGHT HORNER

visuals by: CHUCK KNOCK

WORD GUIDE

DOUBLE-BURN - WHEN A PLATE, PROOF OR PIECE OF FILM, IS EXPOSED MORE THAN ONCE IT IS DOUBLE-BURNED; THIS IS USUALLY DONE IN THE SAME AREA. IF IT IS THE SAME IMAGE DOUBLE-BURNED IN A DIFFERENT PLACE, WE USUALLY SAY IT IS A "STEP-AND-REPEAT".

PIN REGISTER - TO KEEP EXACT REGISTER AND POSITIONING, WE USE A PIN REGISTER SYSTEM; THIS IS A 1/4" PIN ON A BASE WHICH FITS SNUGLY IN A 1/4" HOLE.

PERFORMANCE OBJECTIVE

YOU ARE GOING TO LEARN:

A. HOW TO ACCURATELY STRIP THIS JOB FOR A GIVEN SCREEN TINT;
B. HOW TO DOUBLE-BURN TO GET THE DESIRED SCREEN TYPE;
C. HOW TO PIN-REGISTER ALL THREE EXPOSURES, INSERT THE PROPER SCREENS, AND MAKE A PROOF OF THE PROJECT.

IN ORDER TO DO THIS YOU WILL NEED:

- A LIGHT TABLE
- LINE GAUGE AND TRIANGLE
- T-SQUARE
- SCISSORS
- OPAQUE BRUSH
- PLATEBURNER
- GLASS CLEANER
- OPAQUE
- PUNCH
- BALL JOINT PEN
- X-ACTO KNIFE & RAZOR BLADE
- TAPE (RED AND MASKING)
- NEGATIVE - PROJECT #10
- 20% SCREEN TINT (4" X 7")
- 10% SCREEN TINT (4" X 2")
- TWO REGISTER PINS
- RUBYLITH, 1 X 4
- THREE 5" X 8" MASKING SHEETS
- PROOF PAPER (5" X 8")

WE WILL KNOW YOU CAN DO IT WHEN:

1. YOU EXACTLY PIN REGISTER ALL THREE FLATS WITHIN .002".
2. ALL THREE FLATS ARE COMPLETELY OPAQUED, CUT, AND READY FOR PLATEMAKING.
3. THE SPECIFIED SCREENS CAN BE EASILY INSERTED UNDER THE CORRECT FLATS FOR EXPOSURE.
4. YOU ACCURATELY REGISTER THE FINAL SILVERPRINT PROOF WITHIN .002". (AVERAGE TIME: 2 HOURS)

A TAPE OF THIS MODULE IS AVAILABLE.

WORD GUIDE

LINE - IN SCREENING OR IN HALFTONES, WE TALK OF LINE OR LINES-PER-INCH: A 100-LINE SCREEN MEANS THAT IN ONE SQUARE INCH THERE ARE 100 LINES HORIZONTALLY AND 100 LINES VERTICALLY (100 TIMES 100 - 10,000 DOTS PER SQUARE INCH).

DOTS - A DOT IS THE AREA BETWEEN THE LINES OF A SCREEN THAT ACTUALLY PRINTS; THE THICKER THE LINE, THE MORE IT BLOCKS OUT AND, THEREFORE, THE SMALLER THE DOT.

APPLIED - PUT ONTO

AVAILABLE - READY FOR USE.

INFORMATION

A SCREEN IS A PIECE OF PLASTIC WITH FINE DOTS (AS USED IN GRAPHICS). THE THICKER THE DOTS THE LESS SPACE BETWEEN THEM. MOST NEWSPAPERS USE AN 86-100 LINE SCREEN FOR THEIR WORK BECAUSE THE PAPER IS ROUGH AND ITS QUALITY, POOR. WITH BETTER PRESSES AND SMOOTHER PAPER (LIKE PLASTIC AND CLAY-COATED PAPERS), A FINER SCREEN - LINE 133 OR 150-300 A LINE - CAN BE USED. A FINER SCREEN WILL SHOW MORE DETAIL AND THE DOTS WILL BE LESS NOTICABLE.

DURING EXPOSURE, THE LINES WILL BLOCK OUT LIGHT AND THE SPACE BETWEEN THE LINES WILL PRINT AS DOTS. A SMALL DOT, LIKE 5%, WOULD APPEAR VERY GREY OR ALMOST WHITE ON THE PRINTED IMAGE AND A 95% DOT WOULD APPEAR ALMOST BLACK. ON CHEAPER, ROUGHER PAPER USED ON A POOR QUALITY PLATE IN A CHEAPER PRESS, THE SMALL 5% DOT WOULD PROBABLY BREAK OFF FROM THE PLATE WHILE A 95% DOT MIGHT FILL WITH INK. A STRIPPER MUST KNOW WHAT KIND OF PAPER AND PRESS ON WHICH THE JOB WILL BE RUN TO CHOOSE THE RIGHT SIZE.

SCREEN TINTS CAN BE APPLIED TO THE ORIGINAL ARTWORK. THIS IS CALLED "SHADING FILMS" OR "ZIP-A-TONE". SCREENS ARE PURCHASED IN 20 X 24" SHEETS, COSTING $6.00 EACH. A CERTAIN PERCENTAGE IN A CERTAIN LINE COUNT IS PURCHASED.

NOTE: **PERCENTAGE** - THE SIZE OF THE DOT THAT ACTUALLY PRINTS. SOLID WOULD BE 100%; A VERY SMALL DOT MIGHT BE 10%.

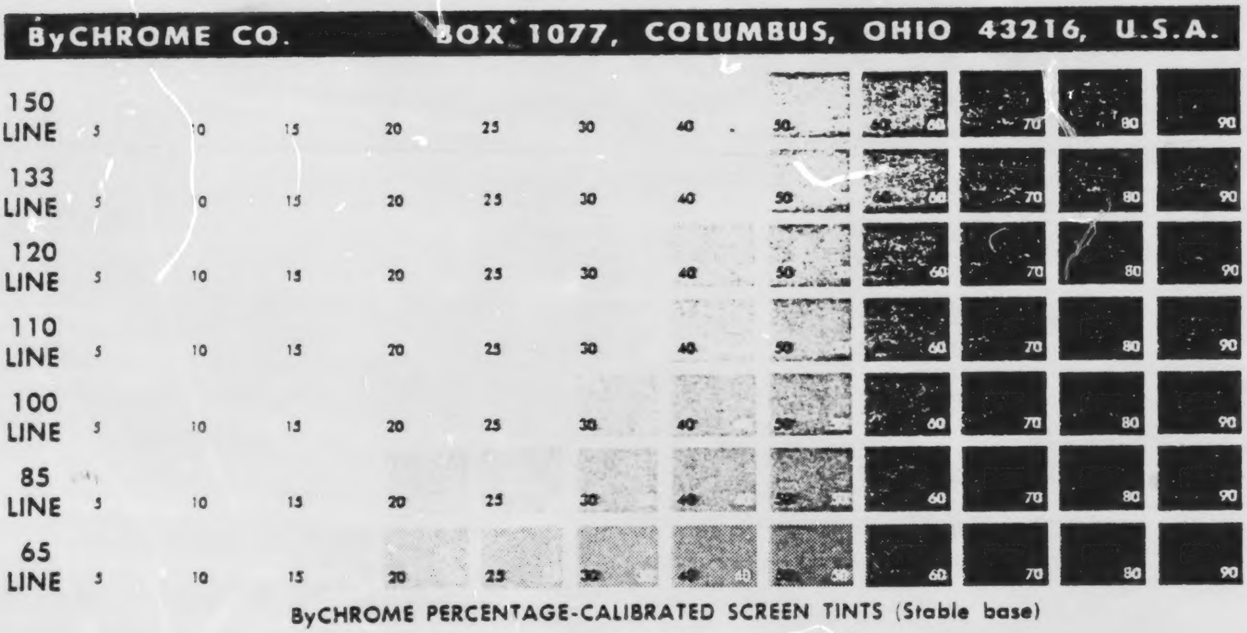
LINE COUNT - THE NUMBER OF LINES OR ROWS OF DOTS IN ONE INCH.

THE ILLUSTRATION ON THE NEXT PAGE SHOWS THE SCREEN RANGE AVAILABLE.

WORD GUIDE

SUBDUED - HELD BACK, KEPT IN THE BACKGROUND.

INFORMATION

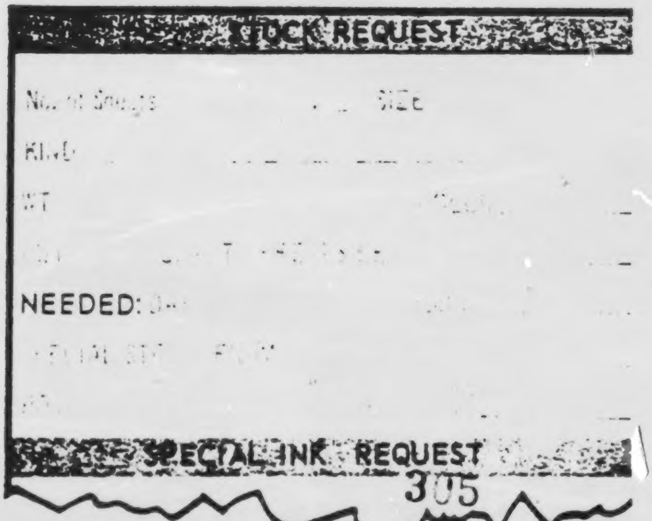


ByCHROME CO. BOX 1077, COLUMBUS, OHIO 43216, U.S.A.

150 LINE	5	10	15	20	25	30	40	50	60	70	80	90
133 LINE	5	10	15	20	25	30	40	50	60	70	80	90
120 LINE	5	10	15	20	25	30	40	50	60	70	80	90
110 LINE	5	10	15	20	25	30	40	50	60	70	80	90
100 LINE	5	10	15	20	25	30	40	50	60	70	80	90
85 LINE	5	10	15	20	25	30	40	50	60	70	80	90
65 LINE	5	10	15	20	25	30	40	50	60	70	80	90

ByCHROME PERCENTAGE-CALIBRATED SCREEN TINTS (Stable base)

EXAMINE THE FOLLOWING ILLUSTRATION: THIS WAS PRINTED IN ONE PASS THROUGH THE OFFSET PRINTING PRESS. THE TOP AND BOTTOM 'TINTED' BANDS REQUIRED TWO SEPARATE EXPOSURES TO THE PLATE, ONE FOR THE SCREENED BACKGROUND AND ONE FOR THE SOLID TYPE. A SEPERATE FLAT WAS REQUIRED FOR EACH. TO SCREEN THE WORDS BETWEEN THE BANDS, A PIECE OF THE SCREEN TINT COULD HAVE BEEN CUT DOWN TO FIT BEHIND THE WORDS TO BE SUBDUED OR A THIRD EXPOSURE COULD HAVE BEEN MADE. TO GET THE TWO 'TINTED' BANDS, AN OPENING IN THE FLAT CAN BE CUT (OR A BOX MADE OF RUBYLITH). FOR THE TYPE, THE NEGATIVE IS STRIPPED-UP AS NORMAL AND ONLY THE DESIRED IMAGE IS LEFT OPEN. SOMETIMES 'HINGES' CAN BE USED (AS IN MOD 1401 11 007 "BREAK FOR COLOR USING RUBYLITH"). THE IMPORTANT THING IS TO KEEP ALL THE EXPOSURES IN EXACT REGISTER. FOR THIS, THE PIN-REGISTER SYSTEM IS BEST.



STOCK REQUEST

SIZE

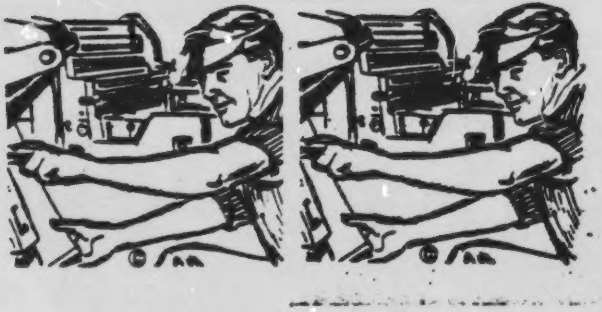
NEEDED:

SPECIAL INK REQUEST

WORD GUIDE

ACCURACY - HOW EXACT SOMETHING IS.

INFORMATION

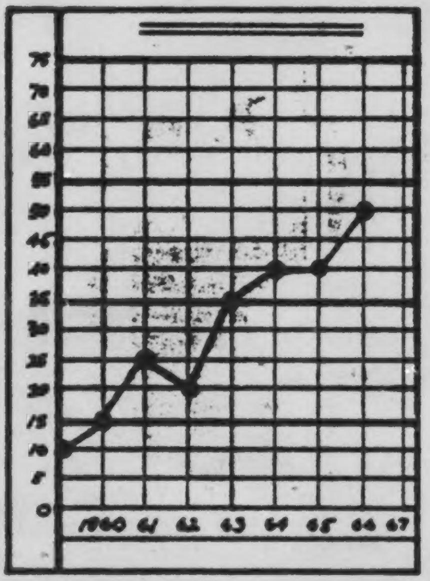


IN THE EXAMPLE AT THE LEFT, A DOUBLE BURN WAS MADE AND STRIPPED AS NORMAL. FOR THE SECOND FLAT, A WINDOW WAS CUT THE SIZE OF THE SQUARE BACKGROUND AND THEN AN ACETATE (CLEAR PLASTIC) OVERLAY WAS PLACED OVER THIS WINDOW. THE AREAS TO BE LEFT CLEAR OR UNEXPOSED WERE COVERED WITH OPAQUE. THEN THIS FLAT WAS EXPOSED. RUBYLITH COULD BE USED FOR THIS OVERLAY. AGAIN, REGISTER IS VERY IMPORTANT AND USUALLY, IT IS A GOOD IDEA TO MAKE A SILVERPRINT PROOF TO DOUBLE-CHECK ACCURACY IN STRIPPING. WHEN USING THE PIN REGISTER SYSTEM SUGGESTED IN THIS MOD, TRY TO KEEP THE PINS AS FAR APART AS POSSIBLE FOR GREATER ACCURACY. REFER TO MOD 1401 11 011 "STRIPPING FOR STEP & REPEAT AND PIN REGISTER" FOR OTHER SUGGESTIONS (THE NEXT MOD IN THIS SERIES). THE EXAMPLE BELOW SHOWS ANOTHER USE FOR SCREENING:

USE A NORMAL HALFTONE...

NORMAL HALFTONE

FOR BACKGROUND OF CHARTS...



SAME HALFTONE NEGATIVE SUBDUED WITH 150-D SCREEN TINT

OR FOR BOOKLET COVERS

SAME HALFTONE NEGATIVE SUBDUED WITH 150-F SCREEN TINT

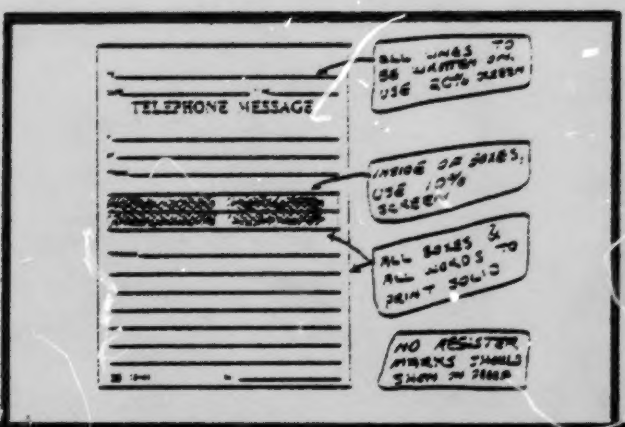
JOB STEPS

1. TAKE ALL MATERIALS AND EQUIPMENT TO YOUR WORK AREA.

2. GET AND CLEAN A LIGHT TABLE.

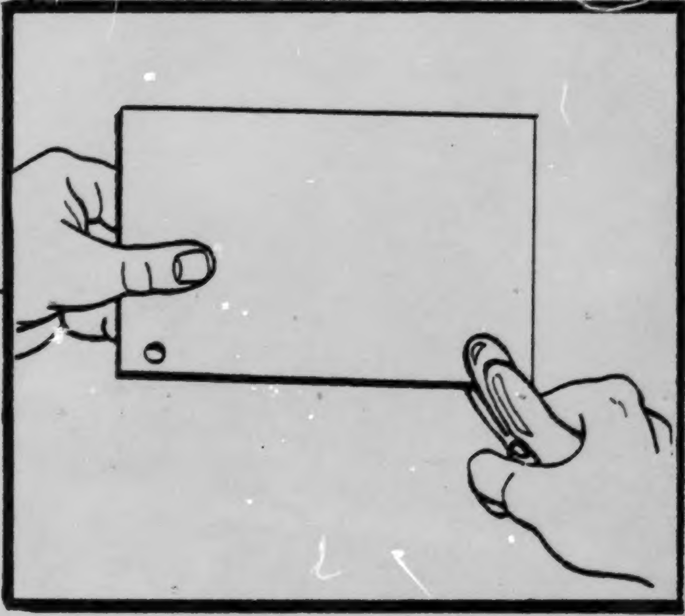
3. GET THE NEGATIVE FOR STRIPPING (SEE SAMPLE ON RIGHT).

4. CAREFULLY STUDY THE INSTRUCTION SAMPLE ON THE RIGHT SO YOU FULLY UNDERSTAND EXACTLY WHAT IS NEEDED HERE.


TELEPHONE MESSAGE
ALL LINES TO BE WRITTEN ON, USE 20% SCREEN
INSIDE OF BOXES, USE 10% SCREEN
ALL BOXES & ALL WORDS TO PRINT SOLID
NO REGISTER MARKS SHOULD SHOW IN PROOF

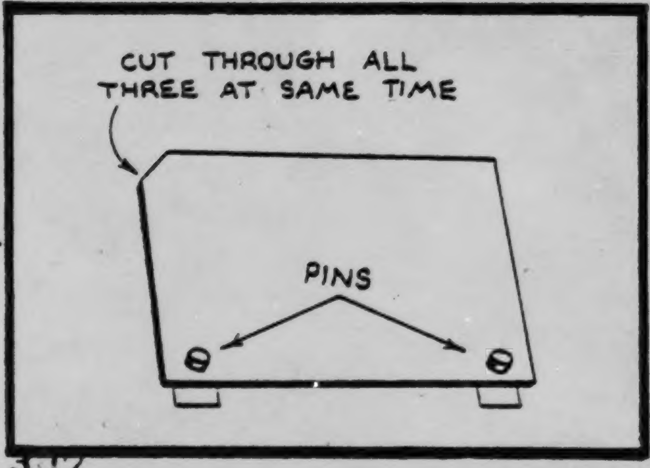
5. USING THE SMALL 5" X 8" GOLDENROD MASKING SHEETS, STRIP-UP ONE OF THE FORMS ON THE PROJECT NEGATIVE SO IT IS CENTERED ON THE 5" X 8" MASKING SHEET. CUT OUT THE ENTIRE WINDOW FOR THIS FORM.

6. GET TWO MORE 5" X 8" MASKING SHEETS. WITH ALL THREE OF THESE HELD TIGHTLY TOGETHER IN YOUR HAND, USE THE PUNCH TO PUNCH A 1/4" ROUND HOLE ABOUT 1/2" IN FROM THE TWO CORNERS NEAREST YOU.



NOTE: BE SURE ALL THREE SHEETS HAVE THE HOLE PUNCHED IN EXACTLY THE SAME SPOT; IF YOU MISS SLIGHTLY ON ANY HOLE, CAREFULLY RE-PUNCH ANOTHER HOLE ABOUT 1/2" AWAY. CHECK YOUR REGISTER WITH THE REGISTER PINS. ALL THREE MASKING SHEETS MUST LAY FLAT AND SMOOTH WITH BOTH PINS PUT IN THE RIGHT POSITION.

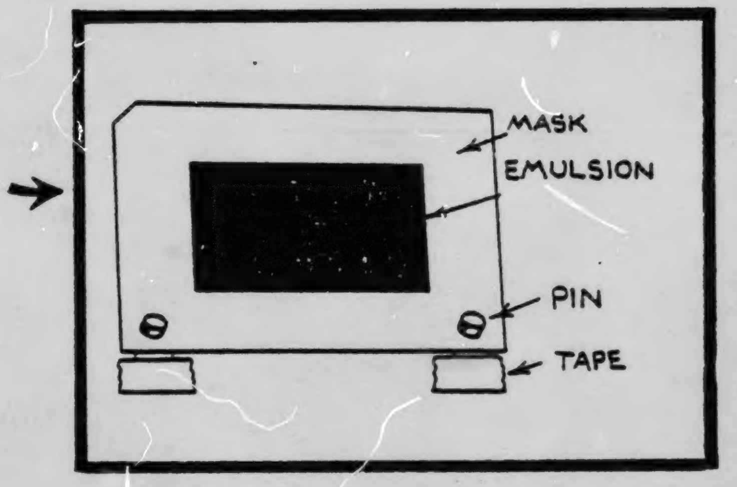
7. TO REDUCE THE CHANCES OF TURNING THE MASKING SHEETS WRONG, HOLD ALL THREE MASKING SHEETS CLOSE TOGETHER AND CUT OFF PART OF ONE CORNER FROM EACH AT THE SAME TIME WHILE THEY ARE ALL ON THE PINS (USE A RAZOR BLADE AND TAKE OFF ABOUT 1/4").



JOB STEPS

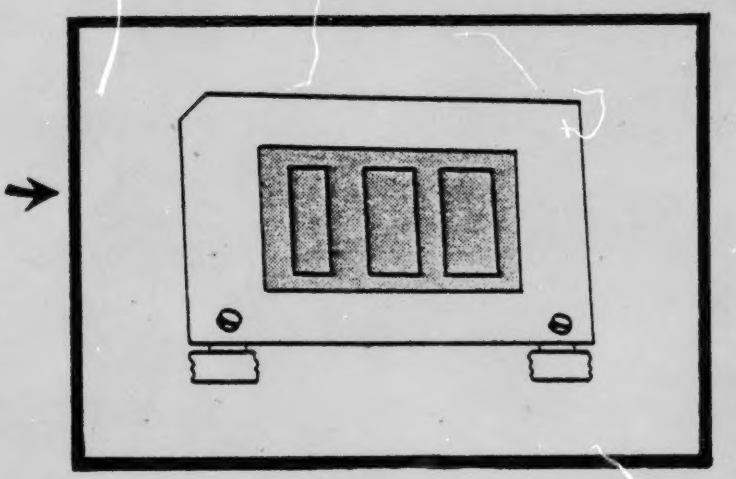
8. PLACE THE STRIPPED FLAT ON THE LIGHT TABLE WITH EMULSION SIDE OF THE NEGATIVE UP. REGISTER TO THE HOLES YOU JUST PUNCHED (HIGH PINS ARE FOR STRIPPING, LOW PINS ARE FOR USE IN THE PLATEMAKER).

9. THE LONGER, FLAT BASE OF THE PIN SHOULD STICK OUT FROM UNDER THE MASKING SHEET SO YOU CAN PUT MASKING TAPE ON IT. USE A 2" PIECE OF TAPE ON EACH (SEE ILLUSTRATION).

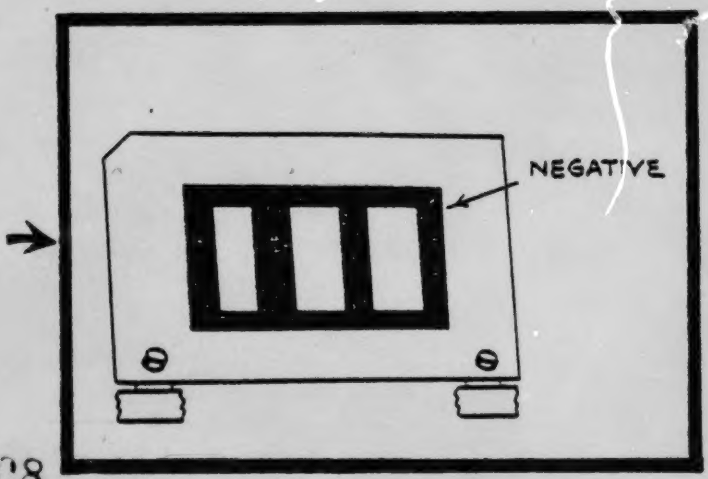


10. PLACE ONE OF THE MASKING SHEETS ON TOP OF THIS STRIPPED-ON MASK AND ACCURATELY TRACE AN OUTLINE OF WHERE YOU WANT TO PRINT-IN THE SCREENED IMAGE. (THE FIRST STRIPPED FLAT WILL BE THE BLACK PRINTER. NOW YOU ARE PREPARING THE SCREENED LINE PRINTER).

11. REMOVE THIS SECOND MASKING SHEET AND, WITH A RAZOR BLADE, CUT OUT THE IMAGE AREA YOU HAVE JUST DRAWN.

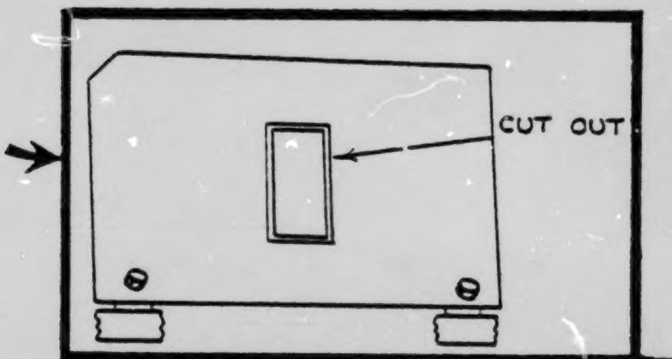


12. REPLACE THE CUT MASKING SHEET ON THE FIRST FLAT (CHECK THE CORNER NOTCH YOU CUT) AND ON THE PINS. NOW, TAKE THE SECOND FORM AND CAREFULLY STRIP IT IN POSITION OVER THE FIRST FLAT. THE NEGATIVES SHOULD LINE UP PERFECTLY.

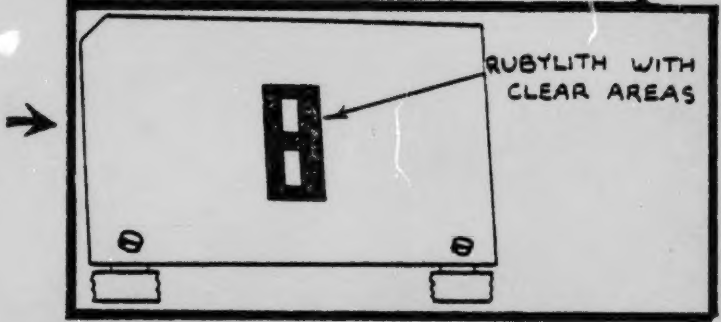


JOB STEPS

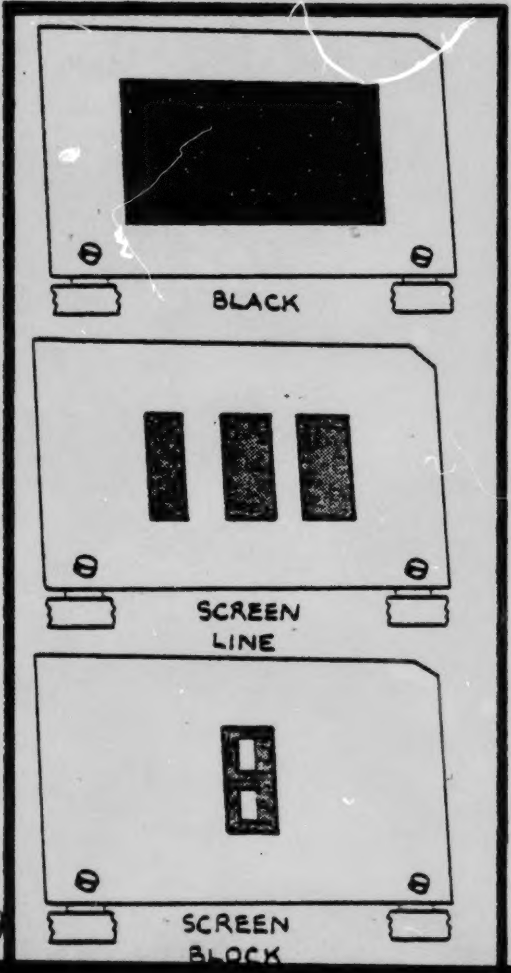
13. TO GET THE SCREENED BLOCK, PLACE THE THIRD MASKING SHEET OVER THE BLACK PRINTING FLAT (ALWAYS USE THE FIRST FLAT FOR REFERENCE) AND MARK OUT AN AREA ABOUT 1/4" LARGER THAN THE DESIRED IMAGE. REMOVE THIS MASKING SHEET, CUT OUT THE WINDOW, AND REPLACE ON THE PINS.



14. GET A SCRAP PIECE OF RUBYLITH (ABOUT 1/4") AND TAPE THIS OVER THE WINDOW (YOU ARE STILL WORKING UPSIDE-DOWN, EMULSION UP). WITH A SHARP, XACTO KNIFE OR RAZOR BLADE, CUT OUT THE EXACT IMAGE YOU DESIRE FROM THE RUBYLITH WITH THE FIRST BLACK FLAT STILL UNDER IT. THE AREA EXPOSED WILL BE WHERE THE LIGHT SHOWS THROUGH.

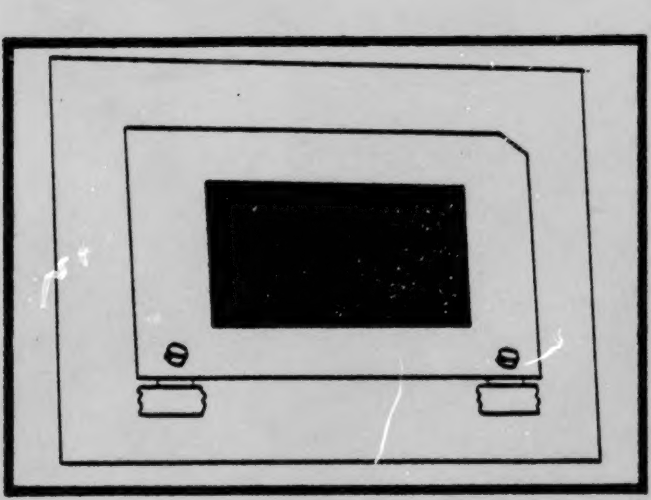


15. NOW YOU HAVE ALL THREE FLATS COMPLETED. CAREFULLY CHECK TO SEE IF YOU HAVE WHAT YOU WANT ON EACH FLAT: (1) A BLACK PRINTER, (2) THE SCREENED LINE PRINTER, AND (3) THE SCREENED BLOCK PRINTER. YOU CAN EASILY OPAQUE OR TAPE OUT ANY UNDESIRED IMAGE AREA ON THE NEGATIVES.

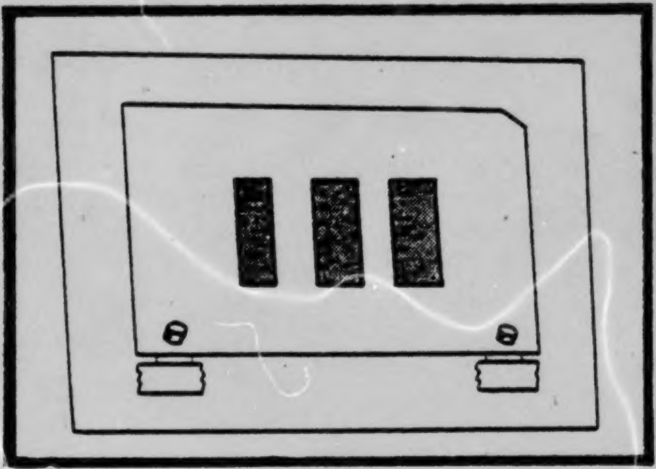


JOB STEPS

16. TAKE OUT AN 8 1/2" X 11" PIECE OF PROOF PAPER AND CENTER THIS ON THE PLATEBURNER. FIND THE SET OF LOW REGISTER PINS AND, WITH THE BLACK PRINTING FLAT CENTERED, PLACE THE PINS IN THE TWO HOLES YOU PUNCHED AND THEN TAPE THE PINS TO THE PROOF PAPER WITH MASKING TAPE. →



17. EXPOSE THE PROOF PAPER FOR ONE MINUTE. THEN, LEAVING THE PINS TAPED, EXCHANGE THIS FLAT WITH THE SECOND FLAT. DO THE SAME WITH THE THIRD FLAT, BEING CAREFUL NOT TO MOVE THE REGISTER PINS. →



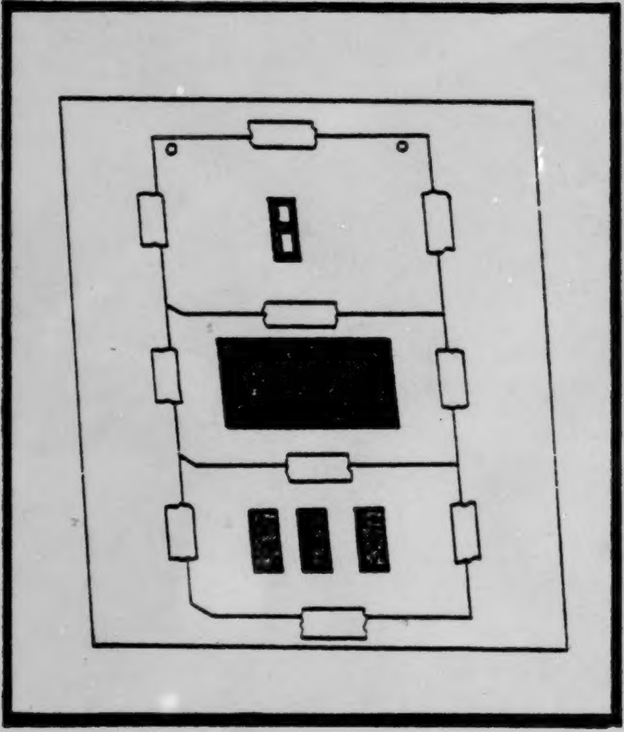
18. WHEN FINISHED, PROCESS THE PROOF AND FIX IT. THE EDGES OF THE PROOF MAY BE COVERED WITH SCRAP GOLDENROD BEFORE EXPOSURE.

JOB STEPS

19. WHEN DRY, CHECK THE 8 1/2" X 11" PROOF WITH A 10X MAGNIFYING GLASS TO SEE IF THE BURNS ARE IN REGISTER SO THIS PROOF AND THE THREE FLATS CAN BE DOUBLE-CHECKED BY YOUR INSTRUCTOR. TAPE ALL THREE FLATS ON ONE 8½" X 11" SHEET OF PAPER AND OVERLAP THEM ABOUT 1" AND TAPE.

NOTE: YOU SHOULD BE SAVING ALL YOUR STRIPPING PROJECTS. WHEN FINISHED, PLACE THEM IN A SMALL NOTEBOOK SO YOU HAVE A COMPLETE UNIT ON STRIPPING, SHOWING WHAT YOU HAVE DONE AND CAN DO.

20. CHECK WITH YOUR INSTRUCTOR AND FIND OUT THE MOD PROJECT WITH WHICH YOU SHOULD CONTINUE.



graphics

unit: STRIPPING

capital area career center

1401 11 011
module: 1401 11 011 3 date: JULY 1977 level:

skill title: STRIPPING FOR "STEP AND REPEAT" AND PIN REGISTER

developed & written by: GLEN PETTIT & DWIGHT HORNER

visuals by: BRUCE BENNETT

WORD GUIDE

ALIGN - PUT INTO CORRECT POSITION.

ACCURATELY - CORRECTLY, ACCORDING TO GUIDELINES; PRECISELY; EXACTLY.

PERFORMANCE OBJECTIVE

YOU ARE GOING TO LEARN:

HOW TO ACCURATELY STRIP-UP TWO NEGATIVES OF SMALL TICKETS ON A MASK SO THE MASK MAY BE STEPPED FOUR TIMES ON A FLAT, PRODUCING EIGHT IMAGES.

HOW TO ACCURATELY MAKE REGISTRATION REFERENCE POINTS ALIGN THE MASK AND FLAT TOGETHER SEVERAL TIMES.

HOW TO MAKE A PROOF TO CHECK ACCURACY AFTER BURNING.

IN ORDER TO DO THIS YOU WILL NEED:

A LIGHT TABLE
LINE GAUGE AND TRIANGLE
X-ACTO KNIFE & RAZOR BLADE
TAPE (RED AND MASKING)
NEGATIVE - PROJECT #11
8 1/2" X 11" SILVERPRINT PAPER
8 1/2" X 11" MASKING SHEET
5" X 8" MASKING SHEET SCRAP
PUNCH
T-SQUARE
SCISSORS
OPAQUE BRUSH
GLASS CLEANER
BALL POINT PEN
PLATEBURNER
OPAQUE
REGISTER PINS

WE WILL KNOW YOU CAN DO IT WHEN:

1. ALL EIGHT IMAGES ARE EXACTLY 100% PERFECT IN POSITION.

2. THE IMAGES ARE CLEAN, SHARP, CLEAR AND STRAIGHT.

3. THE MASK AND FLAT ARE IN PERFECT REGISTER WITH EACH OTHER AND ALL REFERENCE POINTS ARE SPACED EXACTLY 2" APART.

4. THE PROOF IS CLEAN, SHARP AND FLAT AND ALL PSS AND FTS LINES ARE ACCURATELY DRAWN. (ESTIMATED TIME: 2 1/2 HOURS)

A TAPE OF THIS MODULE IS AVAILABLE.

INFORMATION

INFORMATION	MATERIALS	LOCATION OF MATERIALS
ANY STRIPPER WHO FREQUENTLY DOES STEP AND REPEAT WORK SHOULD HAVE A "PIN REGISTER" SYSTEM. THERE ARE MANY DIFFERENT SYSTEMS AVAILABLE WHICH COST $150-UP. THERE ARE THREE METHODS FOR STEP AND REPEAT: HAND CUT, PUNCH, AND TEMPLATE.	NEGATIVE - PROJECT #11	FLAT STORAGE CABINET #2
	8 1/2" X 11" SILVERPRINT PAPER	SEE INSTRUCTOR
	8 1/2" X 11" MASKING SHEET	TOP SHELF, GEAR TRACK REGISTER LIGHT TABLE
	REGISTER PINS	IN THE LIGHT TABLE DRAWER, #1 NEAR CAMERA

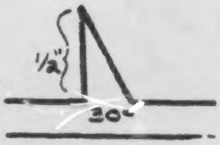
WORD GUIDE

PERPENDICULAR - LINE AT 90° (RIGHT) ANGLE TO ANOTHER LINE.

REGISTER - CORRECT POSITION.

INFORMATION

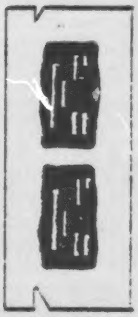
HAND CUT: SMALL NOTCHES ON EACH SIDE OF THE FLAT. IF THE STEPS ARE 4" APART, THEN THE NOTCHES WOULD BE EXACTLY 4" APART ON EACH SIDE. IT WOULD BE MORE ACCURATE TO CUT THE FIRST PAIR OF NOTCHES THROUGH THE MASK AND FLAT WHILE THEY ARE IN REGISTER. THE NOTCHES SHOULD HAVE A PERPENDICULAR CUT ABOUT 1/2" IN FROM THE EDGES AND THEN A 30° CUT OUT TO THE EDGE OF THE FLAT AGAIN, AS SHOWN IN THE ILLUSTRATION.

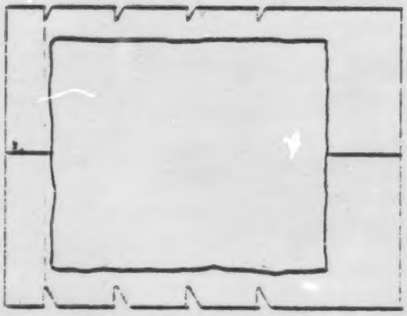


IT IS THIS STRAIGHT PERPENDICULAR CUT THAT DETERMINES THE ACCURACY IN THIS METHOD OF STEP AND REPEAT WORK.

THE NOTCH METHOD IS FAST AND CHEAP, BUT ALSO THE LEAST ACCURATE. IF YOU ARE SLIGHTLY CARELESS, YOU WILL BE MIS-REGISTERED. TAPE THE FLAT TO THE PLATE (OR SILVERPRINT) AND MOVE AND TEMPORARILY TAPE THE MASK TO THE FLAT FOR EACH EXPOSURE. THE MASKING SHEET, USED TO COVER THE UNEXPOSED AREAS, SHOULD BE CHECKED AFTER THE VACUUM IS DRAWN TO SEE IF IT IS COVERING WHAT IT SHOULD.

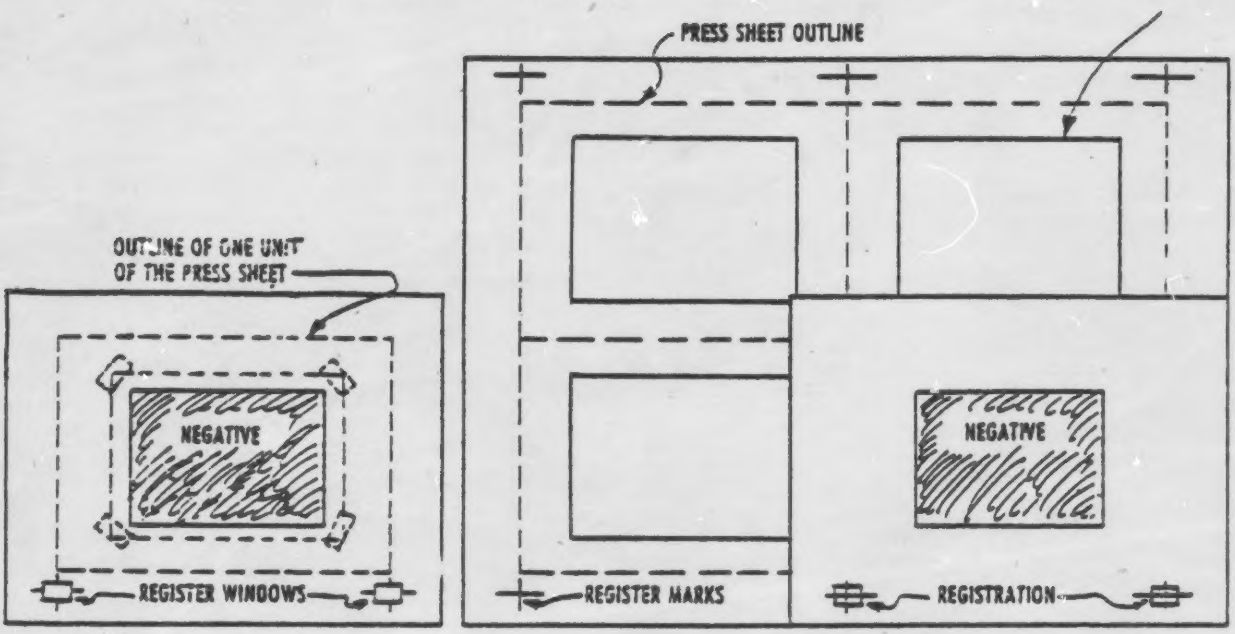
ON A VERY SIMPLE STEP AND REPEAT JOB, ONLY ONE FLAT IS NECESSARY. CUT TWO PAIRS OF NOTCHES (SEE ILLUSTRATION). EXPOSE THE FLAT FOR THE FIRST IMAGE AND THEN MOVE THE FLAT SO THE FIRST PAIR OF NOTCHES LINE UP WITH THE IMAGE ON THE PLATE LEFT BY THE SECOND PAIR OF NOTCHES (SEE ILLUSTRATION). THE FAINT IMAGE CAN BE MADE MORE VISIBLE BY BREATHING MOIST BREATH IN THE AREA WHERE THE SECOND IMAGE SHOULD BE ON THE PLATE.


STEP SHEET OR MASK


FLAT

INFORMATION

A SECOND METHOD FOR HAND CUT STEP AND REPEAT WORK IS THE REGISTER WINDOW METHOD. PREPARE THE FLAT AND CUT THE WINDOWS. STRIP-UP THE NEGATIVE(S) ON A STEP SHEET OR MASK. LAYOUT A REGISTER FLAT FOR THE ENTIRE PLATE TO INCLUDE THE NUMBER OF UNIT AREAS REQUIRED. REGISTER CROSS-MARKS ARE PROVIDED AS SHOWN BELOW.

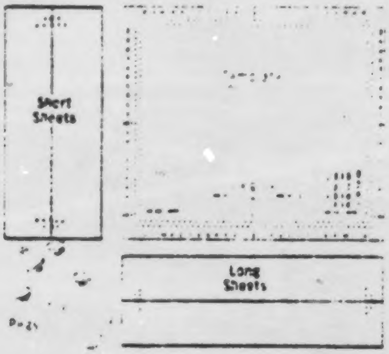


PLACE ANOTHER PIECE OF GOLDENROD PAPER OVER THE FIRST UNIT AREA ON THE FLAT, AND THEN TRACE THE LAYOUT. STRIP THE NEGATIVES FOR THIS UNIT AREA INTO THIS MASK AND CUT THE IMAGE WINDOWS. CUT REGISTER WINDOWS ON THE MASK DIRECTLY OVER THE REGISTER MARKS ON THE FLAT (AS SHOWN IN THE ABOVE ILLUSTRATION). CUT PORTIONS OF THE FLAT, LARGER THAN THE IMAGE AREAS OF THE MASK, INTO EACH OF THE UNIT AREAS ON THE FLAT. AFTER EXPOSING THE PLATE, TAPE THE REGISTER FLAT AT DIAGONAL CORNERS TO THE PLATE. REGISTER REMAINING OPENINGS IN THE FLAT WITH OTHER PIECES OF MASKING SHEET PAPER (TO PREVENT THE EXPOSURE LIGHT FROM STRIKING THEM). MAKE THE EXPOSURE FOR THIS AREA. REPEAT THE PROCESS FOR EACH OF THE AREAS ON THE FLAT.

A THIRD METHOD IS WITH PUNCHED TABS. DRAW ALL YOUR LINES ON THE REGISTER FLAT AND REGISTER THE MASK. TAKE SOME PIECES (1" X 2") OF SCRAP NEGATIVES AND PUNCH A 1/4" HOLE NEAR ONE END. TAPE THE FIRST PAIRS ON THE ENDS (SIDES) OF THE MASK. WITH THE REGISTER PINS IN PLACE ON THE TABS, REGISTER ANOTHER SET OF TABS TO THESE PINS BUT TAPE THEM TO THE REGISTER FLAT. REPEAT THIS FOR EACH OF THE STEPS REQUIRED. THE REGISTER PINS CAN BE TEMPORARILY TAPED TO THE LIGHT TABLE TO SPEED UP STRIPPING.

INFORMATION

TEMPLATE METHOD: THERE ARE MANY DIFFERENT COMPANIES WHICH HAVE A TEMPLATE PIN REGISTER SYSTEM. BASICALLY, PLACE A LARGE SHEET IN THE PLATEBURNER WITH THE PLATE TAPED TO IT. PUT THE REGISTER FLAT ON TOP OF THE PLATE AND THE MASK (LONG OR SHORT) WITH THE NEGATIVES PINNED TO THE LARGER TEMPLATE. SPACE THE PIN HOLES EVERY 1/4" SO THE MASK CAN BE MOVED EXACTLY (AND STRAIGHT) ANY GIVEN AMOUNT. SOME SHOPS HAVE PRE-PUNCHED PLASTIC TABS THEY TAPE TO THE REGISTER FLAT WITH THE PRE-SPACED HOLES ON IT.



FOR ACCURACY, USE FILM OR PLASTIC MASKING SHEETS. IN THE LANSING AREA, THE JOHN HENRY COMPANY DOES THREE OR FOUR STEP AND REPEAT JOBS EVERY DAY, IN FOUR COLORS. THE PLATES ARE APPROXIMATELY 35" X 45" AND CONTAIN ABOUT 200 CARDS (AS USED BY FLORISTS FOR "THANK-YOUS"). THEY USUALLY USE STRIPS OF 15-20 NEGATIVES, EXPOSED IN 10-12 STEPS.

THE ADVANTAGES OF STEP AND REPEAT ARE; IT CAN BE MORE ACCURATE, IT SAVES COST BY REQUIRING FEWER NEGATIVES, AND IT SPEEDS UP PRODUCTION BY SAVING STRIPPING TIME.

A THIRD METHOD IS THE PUNCHED TAB METHOD. DRAW ALL YOUR LINES ON THE REGISTER FLAT AND REGISTER THE MASK. TAKE SOME PIECES (1" X 2") OF SCRAP NEGATIVES AND PUNCH A 1/4" HOLE NEAR ONE END. TAPE THE FIRST PAIRS ON THE ENDS (SIDES) OF THE MASK. WITH THE REGISTER PINS IN PLACE ON THE TABS, REGISTER ANOTHER SET OF TABS TO THESE PINS, BUT TAPE THEM TO THE REGISTER FLAT. REPEAT THIS FOR EACH OF THE STEPS REQUIRED. THE REGISTER PINS CAN BE TEMPORARILY TAPED TO THE LIGHT TABLE TO SPEED UP STRIPPING.

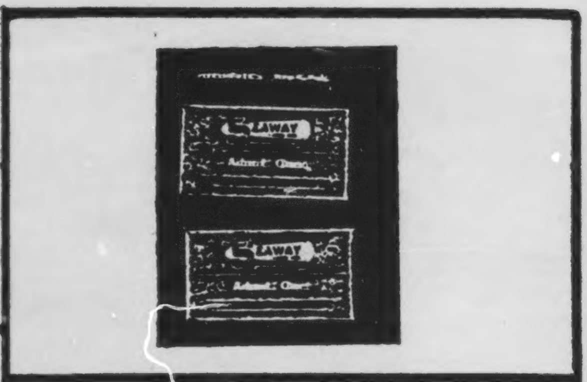
JOB STEPS

1. TAKE ALL EQUIPMENT AND MATERIALS TO THE WORK AREA.

2. CLEAN A LIGHT TABLE AND THE NEGATIVE FOR THIS STRIPPING PROJECT.

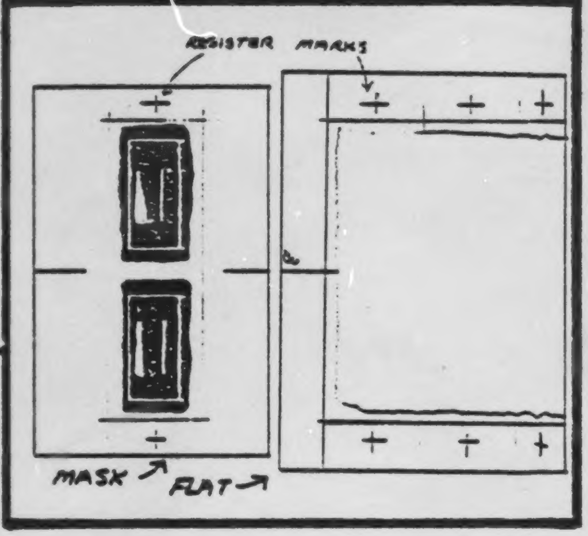
3. DO YOUR LAYOUT ON AN 8 1/2" X 11" MASKING SHEET. THE P.S.S. IS 7" X 9" AND THE F.T.S. ARE 2" X 3 1/4" EACH WITH NO INSIDE TRIM (THE JOB RUN IS 8 UP).

4. GET A PIECE OF SCRAP 5" X 8" MASKING SHEET (OR ABOUT THIS SIZE) AND LAY THIS OUT WITH TWO F.T.S. FORMS SIDE BY SIDE (2" X 6 1/2") AND CENTERED.



5. LOCATE THE SIDE (END) CENTER REFERENCE MARKS FOR THE F.T.S. IMAGE AND LET THIS LINE BLEED OFF THE MASKING SHEETS.

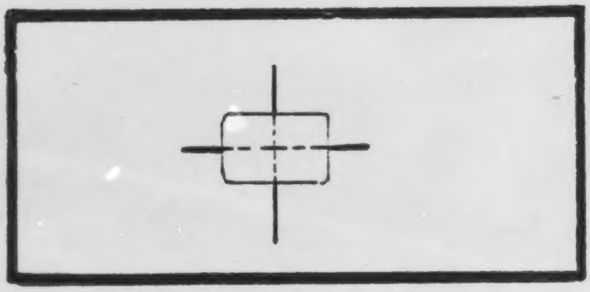
6. DRAW TEN (10) REGISTER MARKS (SHOWN ON RIGHT), ONE ON EACH SIDE OF THE MASK AND FOUR (4) ON EACH SIDE OF THE REGISTER FLAT. USE A VERY FINE BALL POINT PEN AND BE SURE THE REGISTER MARKS ARE SHARP, CLEAR, STRAIGHT, SQUARE, AND ALIGNED SO THEY WILL REGISTER.



7. CENTER THE TWO NEGATIVES IN THE TWO F.T.S. AREAS ON THE MASK. THEN, TAPE AND CUT THE WINDOWS AND OPAQUE AS NORMAL.

8. ON THE MASK, IN BALL-POINT, CAREFULLY RE-DRAW YOUR TWO REGISTER MARKS IN THE TOP SIDE (RIGHT READING).

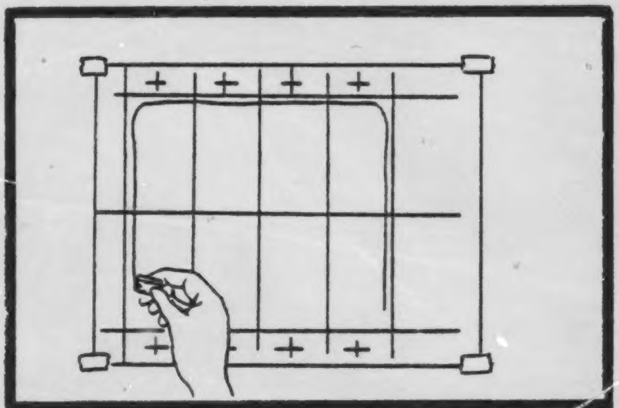
9. NOW, CUT OUT A SMALL SQUARE (1/4" X 1/2") OR PUNCH A 1/4" HOLE FROM THE CENTER OF THE TWO REGISTER MARKS ON THE MASK ONLY.



JOB STEPS

NOTE: IT IS NOT NECESSARY TO DRAW THE REGISTER MARKS ON BOTH SIDES OF THE REGISTER FLAT. THE SIDE YOU LAID OUT CAN BE THE TOP. BY PLACING THE MASK OVER EACH SET OF REGISTER MARKS ON THE REGISTER FLAT, (AS SHOWN ON PAGE 7), THE TWO PAIRS OF REGISTER MARKS WILL ALIGN, AND EACH SET WILL MOVE THE MASK EXACTLY 2" WHEN STEPPED. DOUBLE-CHECK YOURSELF CAREFULLY.

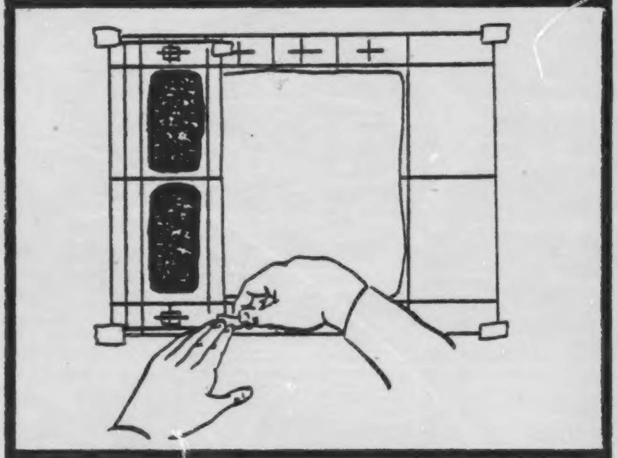
10. CUT OUT THE LARGE WINDOW ON THE REGISTER FLAT. THE WINDOW SHOULD BE AT LEAST 1/4" LARGER THAN THE MAXIMUM IMAGE AT EACH END (PENCIL-IN THE ACTUAL IMAGE AREA AS YOU CHECK THE REGISTER MARKS).



11. MAKE A STEP AND REPEAT PROOF ON 8 1/2" X 11" PAPER:

A. TAPE THE REGISTER FLAT (OR PIN REGISTER IT) TO THE PROOF PAPER WITH TWO PIECES OF TAPE.

B. TEMPORARILY, USE MASKING TAPE TO TAPE THE MASK IN REGISTER WITH THE REGISTER FLAT. ALWAYS TRUST THE GUIDE SIDE, FIRST IF THERE IS ANY DIMENSIONAL CHANGE.



C. COVER THE AREA YOU DO NOT WANT EXPOSED, AND EXPOSE ON THE PLATEBURNER. REPEAT THIS FOR THE NEXT THREE BURNS AND THEN PROCESS THE SILVERPRINT.

12. DRAW YOUR P.S.S. AND F.T.S. LINES ON THE PROOF TO CHECK REGISTER.

13. CLEAN YOUR WORK AREA.

graphics

unit: STRIPPING

capital area career center

1401 11 012

module: 1401 11 012 3 date: 7/77 level:

skill title: MAKING A MECHANICAL FAKE FOUR/COLOR SEPARATION

developed & written by: GLEN PETTIT AND DWIGHT HORNER

visuals by: MIKE SMITH

WORD GUIDE

PROCESS COLORS - BLACK, MAGENTA, CYAN AND YELLOW ARE THE PROCESS COLORS. USING THESE COLORS AS A BASE, ALL SECONDARY AND OTHER COLORS CAN BE OBTAINED. PROCESS INKS ARE TRANSPARENT. THEREFORE, WHEN CYAN AND YELLOW ARE PRINTED ON WHITE PAPER YOU GET A NICE GREEN. A BLUE AS WE KNOW IT WOULD BE TOO RICH TO MIX WITH THE YELLOW TO GET GREEN. INSTEAD WE WOULD GET A DIRTY GREEN PURPLE COLOR.

FAKE FOUR/COLOR SEPARATION - THIS IS A MECHANICAL PROCESS OF HAND-CUTTING NEGATIVES TO OBTAIN THE PROPER MASKS FOR EACH PROCESS COLOR.

PERFORMANCE OBJECTIVE

YOU ARE GOING TO LEARN:

1. HOW TO MAKE A FAKE FOUR/COLOR SEPARATION FROM A BLACK AND WHITE DRAWING.
2. HOW TO USE FOUR PROCESS COLORS TO MAKE TWO SECONDARY COLORS AND USE TWO SCREENS.
3. HOW TO MAKE A FOUR/COLOR, COLOR-KEY PROOF.

AND IN ORDER TO DO THIS YOU WILL NEED:

- A LIGHT TABLE
- LINE GAUGE AND TRIANGLE
- PROTRACTOR
- X-ACTO KNIFE AND RAZOR BLADE
- PUNCH
- T-SQUARE
- SCISSORS
- BALL POINT PEN
- OPAQUE BRUSH
- GLASS CLEANER
- MAGNIFYING GLASS
- PLATEBURNER
- OPAQUE
- TAPE (RED & MASKING)
- REGISTER PINS
- 5" X 8" MASKING SHEETS
- LINE DRAWING
- NEGATIVE OF DRAWING (TWO)
- FILM POSITIVE OF DRAWING
- SCREEN TINTS (APPROPRIATE DENSITY FOR COLOR SEPARATION)
- COLOR KEY (FOUR PROCESS COLORS)
- 4" X 5" PIECE OF CLEAR ACETATE

WE WILL KNOW YOU CAN DO IT WHEN:

1. THE FINAL FOUR/COLOR PROOF SHOWS THE SAME COLORS AS YOU CHOSE ON YOUR ORIGINAL DRAWING.
2. YOUR SECONDARY COLORS ARE TRUE AND YOU HAVE USED THE CORRECT SCREEN TINTS, STRIPPED TO THE PROPER ANGLE SO THERE ARE NO UNUSUAL COLOR PATTERNS.
3. ALL FOUR/COLOR PRINT (FLATS) ARE IN REGISTER, PROPERLY STRIPPED, OPAQUED, FLAT, CLEAN WITH ALL NECESSARY ELEMENTS FOR EACH COLOR.

A TAPE OF THIS MODULE IS AVAILABLE.

WORD GUIDE

KEY - THE FIRST, ORIGINAL OR MOST ACCURATE COPY OR NEGATIVE AND THE ONE THAT ALL OTHER COPIES ARE MADE FROM OR REGISTERED TO. THE ARTIST WILL OFTEN CALL IT A "KEY-LINE" WHEN HE MAKES AN ORIGINAL DRAWING AND THEN PLASTIC OVERLAYS OF COLOR SEPARATIONS. THE PRESSMAN OR BINDERY MAN HAVE A KEY. WHEN HE GETS THE PROPER INK AND POSITION, THIS KEY IS MARKED AND ALL FURTHER COPIES MUST MATCH THIS KEY EXACTLY.

INFORMATION	MATERIALS	LOCATION OF MATERIALS
FOR THIS JOB, SELECT A CARTOON OR DRAWING, OR DRAW ONE YOURSELF. COLORING BOOK PICTURES MAKE EXCELLENT BLACK AND WHITE LINE DRAWINGS FOR THIS PURPOSE. BASICALLY, YOU SHOULD HAVE A BOLD LINE DRAWING. THIS WILL PROVIDE YOUR BLACK PRINTER AND WILL ALSO SERVE AS THE KEY TO WHICH ALL THE OTHER COLORS ARE REGISTERED. IF THE LINES ARE BOLD AND THICK, A SLIGHT MISS-REGISTER WILL BE LESS NOTICEABLE BETWEEN THE COLORS. NO LINE SHOULD BE LESS THAN 1MM (THE THICKNESS OF A BALL-POINT LINE, MEDIUM POINT). A PHOTOGRAPHIC REDUCTION OF A LINE DRAWING WILL ALSO REDUCE THE THICKNESS OF THE LINES. THEREFORE, IF YOU PLAN TO MAKE A REDUCTION IN YOUR DRAWING, MAKE SURE THE ORIGINAL LINES ARE BOLD ENOUGH SO THEY CAN BE REDUCED WHILE LEAVING YOU BOLD LINES TO WORK WITH.	LINE DRAWING	ACQUIRE FROM A COLORING BOOK FROM HOME OR TRACE A CARTOON OR CLIP IT FROM AN OLD MAGAZINE.
	2 NEGATIVES - LINE DRAWING & POSITIVE	HAVE SOMEONE ON A CAMERA MOD SHOOT IT FOR YOU.
	REGISTER PINS	IN THE LIGHT TABLE, #1 - NEAR CAMERA.
	5" X 8" MASKING SHEETS	TOP SHELF, GEAR TRACK LIGHT TABLE
THE KEY WILL BE BLACK; PARTS OF THE DRAWING WILL BE YELLOW, RED AND BLUE. TWO SECONDARY COLORS ARE REQUIRED, LIKE GREEN AND AN ORANGE. TWO SCREEN TINTS ARE ALSO REQUIRED. BY SCREENING THE RED WITH A 30% SCREEN, YOU WOULD GET PINK. A 10% BLUE WITH A 50% YELLOW WOULD GIVE YOU A LIGHT GREEN. YOU CAN TAKE A SIMPLE PICTURE AND HAVE A BLUE SKY ALL AROUND IT OR HAVE THE LOWER HALF SCREENED FOR A GREEN COLOR. THE POSSIBILITIES ARE UNLIMITED.	SCREEN TINTS	HAVE CAMERA PERSON DUPLICATE THE NEEDED SCREENS FROM ORIGINAL.
	COLOR-KEY	SEE INSTRUCTOR

INFORMATION	MATERIALS	LOCATION OF MATERIALS
SELECT A SIMPLE PICTURE BECAUSE EACH COLOR MAY TAKE AN HOUR OR MORE TO STRIP. BEFORE YOU START SHOOTING THE SELECTED ILLUSTRATION, MAKE A ZEROX COPY AND MARK IT UP BY COLORING IT WITH CRAYONS OR COLORED PENCILS. INDICATE THE COLOR FOR EACH PART AND PERCENTAGE OF SCREEN TINT OR TINTS NEEDED TO OBTAIN EACH COLOR. CONSULT AT THIS POINT WITH YOUR INSTRUCTOR OR MANAGER TO SEE IF YOU WILL COME CLOSE TO THE DESIRED COLORS (BASED ON THE WAY YOU HAVE MARKED UP YOUR DRAWING). YOU CAN SAVE TIME AND ALSO DEVELOP A BETTER UNDERSTANDING OF THE PROJECT IF YOU GET SUGGESTIONS OF STUDENTS WHO HAVE ALREADY WORKED ON THIS MOD.		

WORD GUIDE

SCREEN ANGLE - SCREENS ARE MADE UP OF VERTICAL AND HORIZONTAL ROWS OF DOTS. IF THE ROWS ARE STRAIGHT UP AND DOWN IN RELATION TO THE HORIZONTAL BASE OF YOUR T-SQUARE OR STRAIGHT EDGE, THE SCREEN ANGEL IS 90°.

MOIRE PATTERN - AN UNDESIRABLE SCREEN PATTERN IN PROCESS COLOR PRINTING CAUSED BY INCORRECT SCREEN ANGLES. THE PATTERN WILL APPEAR TO BE A PLAID-LIKE OR CHECKERBOARD DESIGN.

EQUIVALENT - SOMETHING LIKE SOMETHING ELSE; THE EQUAL OF.

INFORMATION

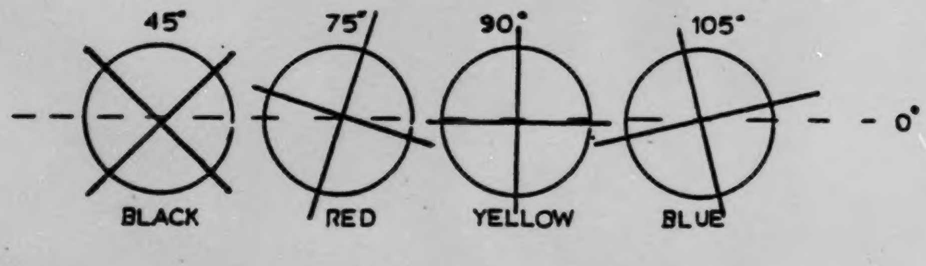
THE SIZE WILL BE SMALL (DUE TO MATERIALS COST AND SPACE) AND ALL YOUR NEGATIVES OR POSITIVES CAN BE SHOT ON 4" X 5" (10 X 12 CM) FILM. NO MATERIALS NEED BE ANY LARGER (USE 5" X 8" MASKING SHEETS). IN LARGE SHOPS, THEY ALWAYS RUN COLOR PATCHES TO CHECK THE INK QUALITY. ALSO, STRIPPERS IN THE INDUSTRY WILL USE RUBYLITH MASKING FILM (OR EQUIVALENT) TO CUT THEIR MASK FOR EACH COLOR. RUBYLITH IS A MUCH MORE STABLE BASE MATERIAL THAN THE GOLDENROD MASKING SHEETS WE ARE USING. IT WILL NOT STRETCH OR SHRINK AS MUCH. WE ARE USING THE GOLDENROD MASKING SHEETS TO CUT THE MASK FOR EACH COLOR BECAUSE IT IS MUCH LESS EXPENSIVE AND WE CAN STILL MAKE A FAKE COLOR SEPARATION. REGISTER MARKS SHOULD BE USED ON THE ORIGINAL COPY AND APPEAR ON ALL THE COLOR PRINTERS.

WHEN THE MASK IS CUT FOR EACH COLOR, THE APPROPRIATE SCREEN (10%, 20%, 30%, TINT ETC.) MUST BE ATTACHED (STRIPPED) TO THE FLAT, EMULSION SIDE UP. HOWEVER, THE ANGLE OF THE SCREEN IS CRITICAL IF YOU WANT TO AVOID A MOIRE PATTERN. FOR EXAMPLE, USE THIS ILLUSTRATION: 10% BLUE WITH A 50% YELLOW WOULD GIVE YOU A LIGHT GREEN. THE BLUE (CYAN) SCREEN MUST BE STRIPPED AT A 105° ANGLE AND THE YELLOW MUST BE STRIPPED AT A 90° ANGLE TO AVOID A PRINTED MOIRE PATTERN IN THE GREEN.

STANDARD SCREEN ANGLES FOR EACH OF THE FOUR PROCESS COLORS ARE AS FOLLOWS:

(1) BLACK 45° ANGLE
(2) MAGENTA 75° ANGLE
(3) YELLOW 90° ANGLE
(4) CYAN 105° ANGLE

(SEE ILLUSTRATION BELOW)



WORD GUIDE

APPROPRIATE - CORRECT OR NECESSARY.

INFORMATION

THE DUPLICATES SHOULD BE MADE IN THE CAMERA AREA BY CONTACTING (EMULSION TO EMULSION) THE ORIGINAL SCREEN TO DUPLICATING FILM. OBTAIN THE CORRECT SCREEN ANGLE BY USING A PROTRACTOR TO DRAW A LINE AT THE APPROPRIATE ANGLE ACROSS YOUR MASKING FLAT. LINE UP THE SCREEN TO THE LINE USING A MAGNIFYING GLASS (10X) TO SEE THE ROWS OF DOTS. REMEMBER, IF IT IS YOUR DESIRE TO OBTAIN A 30% SCREEN TINT WHEN PRINTED FOR A PARTICULAR COLOR, YOU MUST USE A 70% NEGATIVE SCREEN. A 20% PRINTED SCREEN WOULD REQUIRE STRIPPING AN 80% NEGATIVE SCREEN AND ETC.

THIS MOD BASICALLY SUMS UP ALL THE BASIC STRIPPING SKILLS YOU HAVE LEARNED AND ALSO HOW TO GET THE APPROPRIATE SCREEN ANGLE FOR PROCESS COLOR PRINTING. THIS IS THE MOST DIFFICULT MOD AND WILL TAKE THE MOST TIME, BUT IT CAN BE THE MOST IMPRESSIVE OF ALL YOUR STRIPPING JOBS. CHECK SOME OF THE OTHER STUDENTS' SEPARATIONS TO GET SOME IDEAS ON WHAT CAN BE DONE. SOMETIME THIS YEAR, YOU WILL MAKE A SET OF DUPLICATE NEGATIVES WHICH WILL BE USED FOR MAKING PLATES TO RUN ON THE OFFSET PRESS, IN ALL FOUR PROCESS COLORS.

JOB STEPS

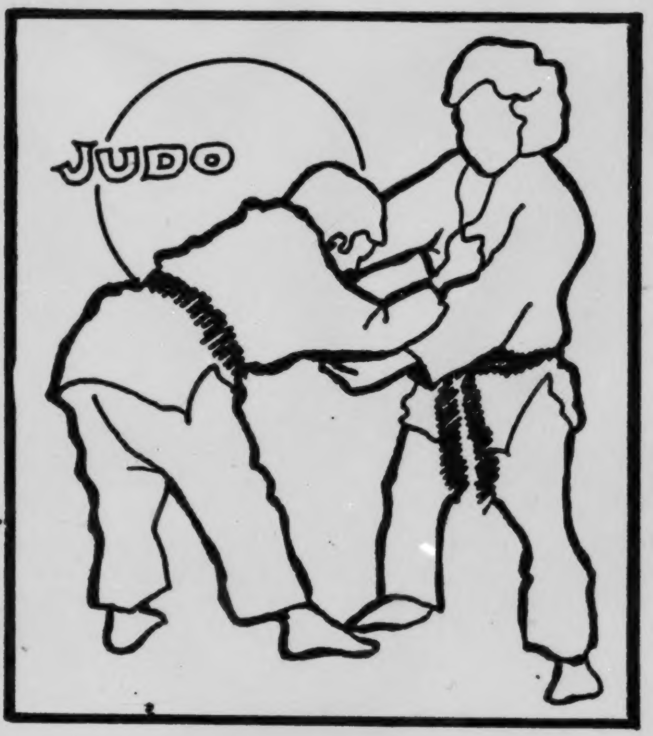
1. TAKE ALL EQUIPMENT AND MATERIALS TO YOUR WORK AREA.

2. CHOOSE AND CLEAN A LIGHT TABLE.

3. SELECT A DRAWING FROM ANY SOURCE (LIKE A COLORING BOOK) OR MAKE ONE YOURSELF.

4. BE SURE THE THIN LINES ARE AT LEAST 1MM AFTER REDUCING IT ON CAMERA, IF THAT IS NECESSARY.

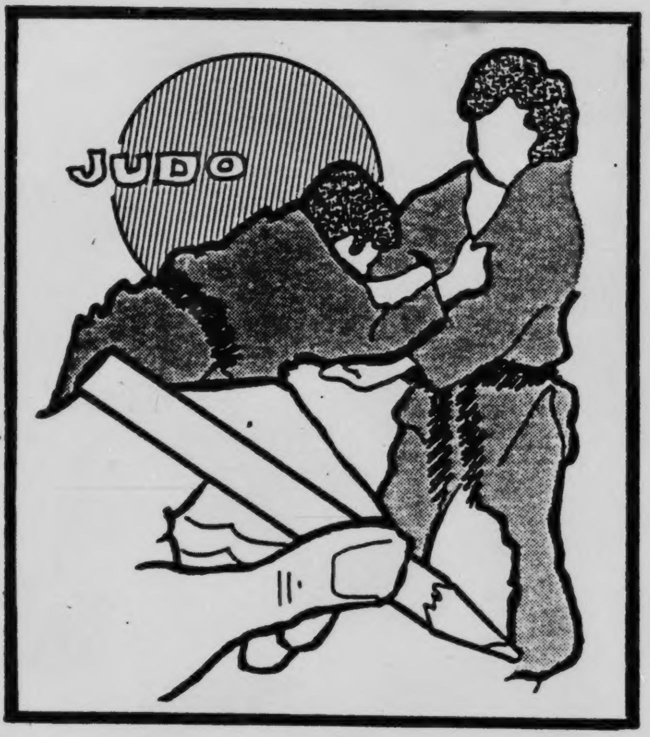
   NOTE: YOU WANT A BOLD CLEAN DRAWING WITHOUT A LOT OF FINE DETAIL. GIVE YOURSELF PLENTY OF ROOM TO PLACE THE COLORS YOU WANT. IF THE AREAS FOR COLOR ARE TOO SMALL, THEY WILL HAVE LITTLE EFFECT.



5. MAKE SURE THE IMAGE ON THE NEGATIVE DOES NOT EXCEED 3" X 4". THE ORIGINAL CAN BE REDUCED ON CAMERA TO THE APPROPRIATE SIZE. IT MUST FIT ON 4" X 5" FILM INCLUDING THE REGISTER MARKS. INCLUDE YOUR NAME AND TWO COMMERCIAL REGISTER MARKS ON THE ORIGINAL BEFORE THE COPY IS SHOT.

6. BEFORE GOING TO CAMERA, MAKE A ZEROX COPY OF YOUR DRAWING.

7. WITH DESIRED COLORED MARKERS OR CRAYONS, COLOR THE AREAS ON THE ZEROX COPY. THIS IS CALLED "COLOR UP".



8. MARK-UP THE COPY INDICATING COLOR AND PERCENTAGE SCREENS YOU WANT TO USE FOR EACH COLOR IN THE DRAWING (YOU WILL PROBABLY NEED SOME HELP WITH THIS STEP FROM ANOTHER EXPERIENCED STUDENT OR YOUR INSTRUCTOR).

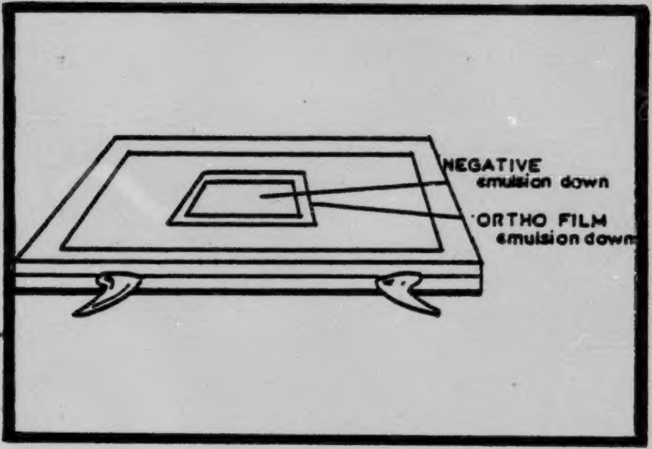
JOB STEPS

9. NOW, DECIDE HOW MANY MASKS YOU WILL HAVE TO CUT AND ALSO THE SCREEN DENSITIES YOU WILL NEED FOR EACH COLOR. CHECK WITH YOUR INSTRUCTOR BEFORE GOING ON.

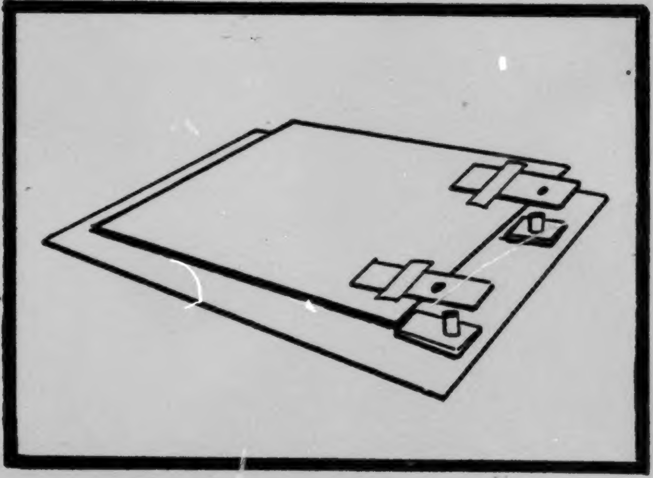
   NOTE: WHEN STRIPPING THE HAND-CUT NEGATIVES, YOU WILL NEED TO USE NEGATIVE SCREEN VALUES. FOR EXAMPLE, IF YOU INDICATE TO USE A 10% SCREEN IN MAGENTA FOR AN AREA, YOU MUST STRIP-IN A 90% SCREEN ON YOUR NEGATIVE MASK.

10. HAVE SOMEONE IN CAMERA SHOOT YOUR LINE DRAWING TO MAKE TWO NEGATIVES THE APPROPRIATE SIZE (SAME SIZE).

11. ALSO IN CAMERA, CONTACT THIS NEGATIVE TO A PIECE OF ORTHO TYPE 3 FILM (USING THE VACUUM FRAME TO MAKE A FILM POSITIVE). MAKE YOUR CONTACT EMULSION TO BASE (THIS POSITIVE BECOMES YOUR BASIC KEY REGISTER FLAT AND YOUR GOLDENROD MASKS ARE CUT-TAPED SECURELY OVER THE POSITIVE).

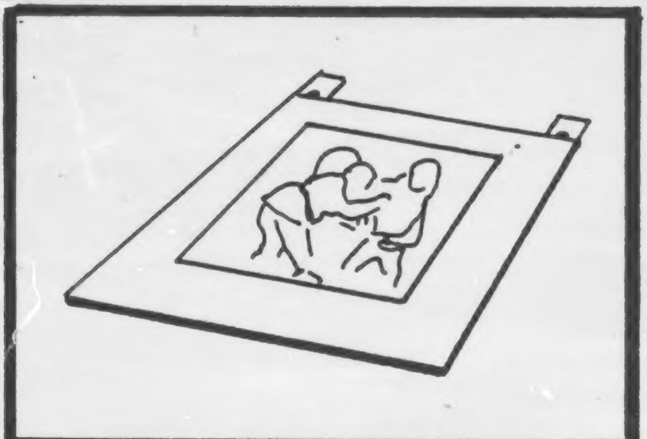


12. REGISTER PUNCH ALL FLATS FOR THE 1/4" PIN REGISTER SYSTEM AFTER YOU HAVE DETERMINED THE NUMBER OF SHEETS NEEDED. PUNCH TWO EXTRA SHEETS, IN CASE YOU RUIN A COUPLE DURING THE PROCESS.



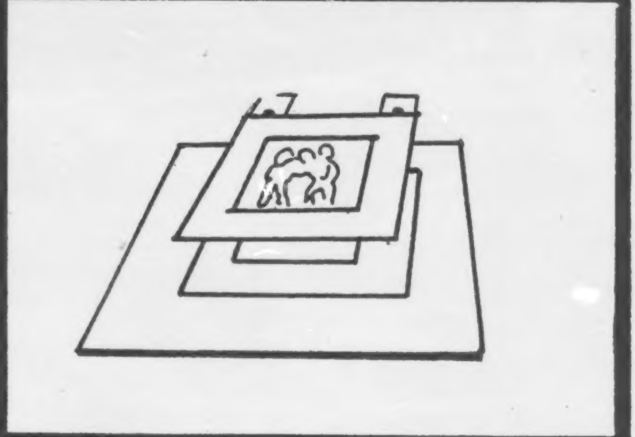
JOB STEPS

13. STRIP THE NEGATIVE TO THE CENTER OF A 5" X 8" MASKING SHEET. TURN IT OVER AND CUT OUT THE WINDOW. HOLD ON TO THE SECOND NEGATIVE UNTIL LATER.

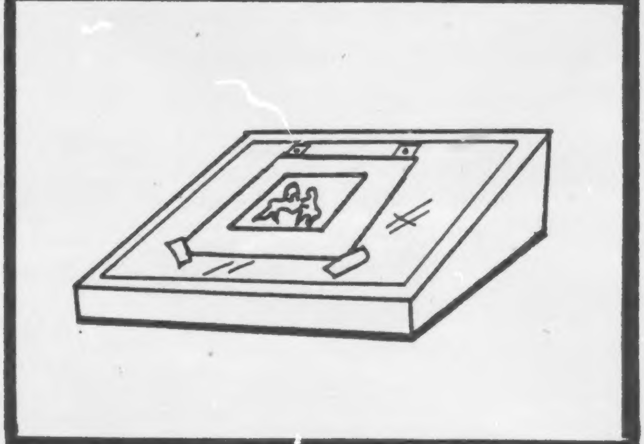


14. TURN NEGATIVE FLAT BACK OVER (EMULSION SIDE UP) AND INSERT THE REGISTER PINS.

15. PLACE ANOTHER MASKING FLAT IN REGISTER WITH THE NEGATIVE FLAT AND STRIP THE POSITIVE IN REGISTER WITH THE NEGATIVE (EMULSION UP).

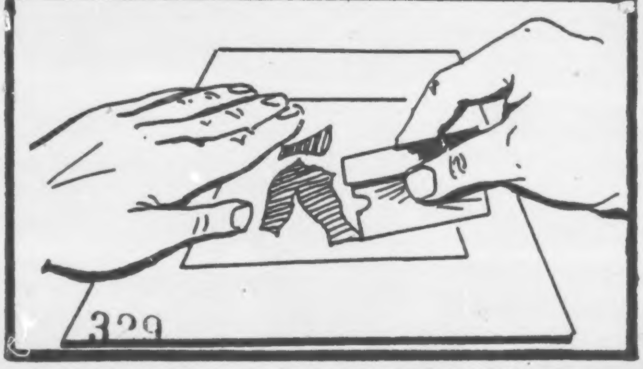


16. FOR NOW, PUT THE NEGATIVE FLAT TO THE SIDE. TURN OVER THE POSITIVE FLAT AND TAPE IT SECURELY TO THE LIGHT TABLE (EMULSION SIDE DOWN AND RIGHT READING). MAKE SURE IT IS LAYING FLAT ON THE TABLE WITH NO BUCKLES. DO NOT TAPE DOWN THE REGISTER PINS; INSERT THEM IN THE HOLES.

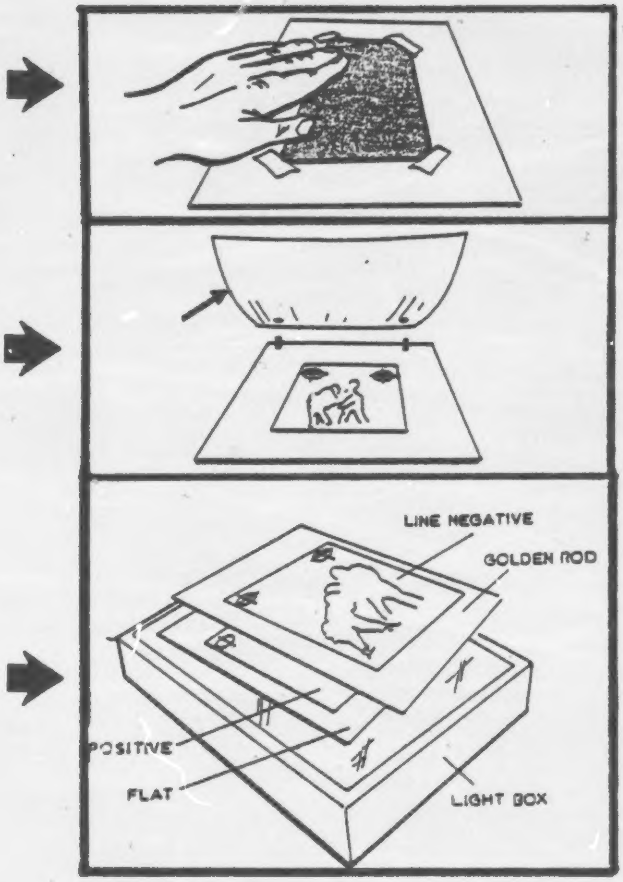


17. CUT OUT THE WINDOW. NOW, THE POSITIVE IS READY TO BE USED AS THE KEY REGISTER FLAT FOR CUTTING THE REST OF THE MASKING FLATS FOR STRIPPING THE SCREENS.

[illegible]8. USING SHARP X-ACTO KNIFE, BEGIN CUTTING EACH MASK FOR EACH COLOR, PLACING ONE AT A TIME ON THE REGISTER PINS OVER THE POSITIVE KEY REGISTER FLAT.



NOTE: DO NOT CUT THROUGH THE FILM POSITIVE. IF NECESSARY, USE AN EXTRA PIECE OF CLEAR ACETATE FILM OVER POSITIVE AND UNDER THE LAYOUT FLAT YOU ARE CUTTING TO AVOID CUTTING FILM POSITIVE. BE SURE YOU CUT-OUT THE FLAT, STRIP THE SCREEN TINT ON IT (EMULSION SIDE UP) AND WRITE THE COLOR ON IT BEFORE GOING ON TO THE NEXT FLAT. BE SURE TO TAPE THE MASK YOU ARE CUTTING SECURELY TO THE TABLE.



19. AS YOU FINISH CUTTING EACH FLAT, STRIP IN THE APPROPRIATE SCREEN TINT. USE DUPLICATE SCREENS RATHER THAN CUTTING UP THE ORIGINAL SCREENS.

20. AFTER CUTTING AND STRIPPING ALL THE MASKS NEEDED FOR THIS JOB, PUT ANOTHER GOLDENROD SHEET ON THE REGISTER PINS OVER THE FILM POSITIVE.

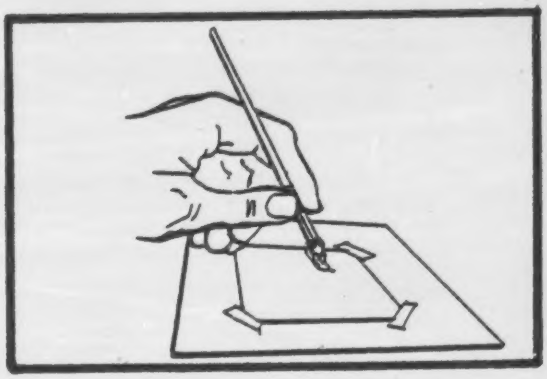
21. TAKE YOUR SECOND LINE NEGATIVE AND PLACE IT ON THE MASK (EMULSION SIDE UP) AND LINE UP THE REGISTER MARKS ONLY. TAPE IT TO THE FLAT. YOUR LINE NEGATIVE WILL NOT LINE UP WITH THE POSITIVE BECAUSE THE TWO PIECES OF FILM ARE LAYING BASE TO BASE. WE ONLY WANT TO USE THE 2 REGISTER MARKS ON THIS NEGATIVE FLAT.

22. TURN OVER THE NEGATIVE FLAT AND CUT OUT THE MASK AROUND THE REGISTER MARKS ONLY. THIS FLAT WILL BE USED TO DOUBLE-EXPOSE EACH PIECE OF DUPLICATING FILM USED FOR EACH COLOR TO PROVIDE FOR THE REGISTER MARKS ON EACH COLOR SEPARATED NEGATIVE.

WORD GUIDE

COMPOSITE NEGATIVE - THE COMBINING OF TWO OR MORE DIFFERENT NEGATIVES ON DIFFERENT FLATS TO MAKE ONE SINGLE NEGATIVE WITH ALL THE VARIOUS DETAILS OF EACH COLOR.

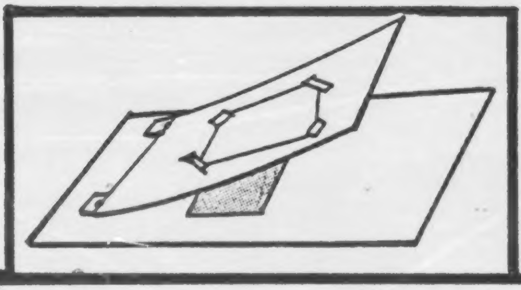
JOB STEPS



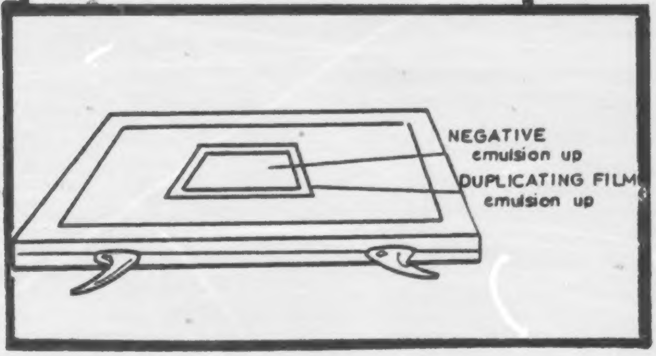
23. OPAQUE ANY PINHOLES OR SCRATCHES ON THE FIRST LINE NEGATIVE. THIS IS YOUR BLACK PRINTER. BE SURE TO WRITE THE APPROPRIATE COLOR ON EACH OF YOUR FLATS.

24. YOU NOW HAVE A FULL SET OF HAND-CUT COLOR SEPARATION NEGATIVES. CHECK YOUR WORK, IF NECESSARY, BY MAKING PROOFS.

25. IF YOUR WORK IS SATISFACTORY AT THIS POINT, MAKE A SET OF DUPLICATE NEGATIVES WITH THE HELP OF SOMEONE WHO HAS COMPLETED CAMERA MOD 1401 10 018 "DUPLICATING FILM". THIS WILL BE DONE ON THE NUARC PLATEMAKER.



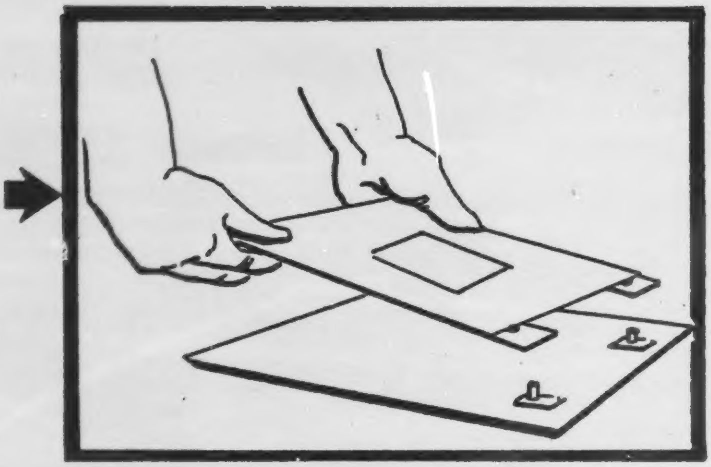
26. PIN REGISTER EACH COLOR SET OF NEGATIVES TO A PIECE OF DUPLICATING FILM.



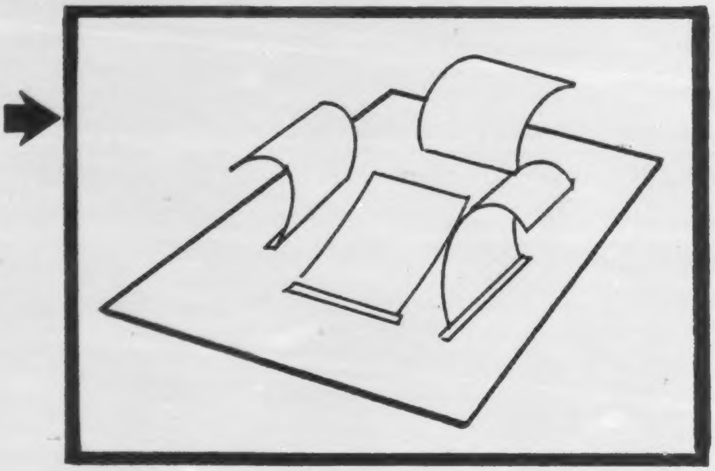
27. CONTACT THE FILM (EMULSION TO EMULSION) TO MAKE A COMPOSITE NEGATIVE. DO THIS FOR EACH OF THE FOUR COLORS. YOU WILL HAVE AT LEAST A DOUBLEBURN FOR EACH OF THE COLORS, EXCEPT BLACK, BECAUSE OF EXPOSING REGISTER MARKS ON THE COMPOSITE NEGATIVE. SOME COLORS MAY REQUIRE MORE THAN TWO BURNS DEPENDING ON THE COMPLEXITY OF YOUR JOB. THIS SET OF NEGATIVES (ONLY FOUR), WILL BE USED TO MAKE OFFSET PLATES TO PRINT YOUR MECHANICAL COLOR SEPARATION ON THE OFFSET PRESS.

JOB STEPS

28. WITH YOUR SET OF FOUR COLOR SEPARATION NEGATIVES, YOU CAN START MAKING COLOR-KEY PROOFS OF EACH COLOR. USE PUNCHED TABS TAPED TO COLOR KEY TO REGISTER YOUR WORK. THE REGISTER MARKS ON THE NEGATIVES WILL MAKE IT EASY TO REGISTER THE FOUR COLOR-KEY PROOFS TO SEE HOW THE JOB IS GOING TO APPEAR WHEN FINISHED. THE MARKS ALSO HELP THE PRESSMAN TO GET POSITION ON THE COLOR MORE QUICKLY.



29. MOUNT YOUR FOUR-COLOR COLOR-KEY PROOF CENTERED AND CLEAN ON A HEAVIER 8 1/2" X 11" PIECE OF PAPER AND ALSO YOUR ORIGINAL FLATS FOR YOUR NOTEBOOK.



NOTE: BECAUSE OF THE EXTRA WORK INVOLVED IN INKING AND CLEANING THE PRESS FOUR TIMES AND USING THE SPECIAL PROCESS COLORS, WE WILL TRY TO SCHEDULE SEVERAL FOUR-COLOR JOBS AT ONCE, OR MAKE LARGER PLATES WITH TWO DIFFERENT JOBS ON IT TO RUN AT ONCE. THE AVERAGE, SMALL, MECHANICAL FOUR-COLOR SEPARATION THAT YOU HAVE JUST DONE ACTUALLY COST US ABOUT $10 TO MAKE AND PROOF. IN INDUSTRY, THIS SAME JOB WOULD COST FROM $100 TO $200.

30. CLEAN UP AND SECURE YOUR WORK AREA. CHECK WITH YOUR INSTRUCTOR TO CRITIQUE THIS ENTIRE JOB AND FIND OUT THE NEXT MOD YOU SHOULD START ON.

graphics

unit: STRIPPING

capital area career center

module: 1401 11 013
1401 11 013 3 **date:** 7/77 **level:**

skill title: STRIPPING FOR COMBINATIONS (PHOTOGRAPHS & TYPE)

developed & written by: GLEN PETTIT AND DWIGHT HORNER

visuals by: KAREN LUDWIG

WORD GUIDE

SURPRINT (OVERPRINT)	NORMAL BLACK CHARACTERS (MARKS OR DRAWINGS) WHICH ARE PRINTED ON TOP OR OVER ANOTHER PICTURE OR DRAWING ARE SAID TO BE OVERPRINTED AND TECHNICALLY KNOWN AS A SURPRINT. ON A HALFTONE, IF THE EMULSION IS REMOVED, THE AREA APPEARS LIKE AN OVERPRINT. NORMALLY, OVERPRINTS MUST BE DOUBLE-BURNED.

PERFORMANCE OBJECTIVE

YOU ARE GOING TO LEARN:

HOW TO STRIP-UP A HALFTONE AND LETTERING ON TWO FLATS TO PRODUCE THE DESIRED COMBINATIONS ON THE PICTURE, WHEN PRINTED.

IN ORDER TO DO THIS YOU WILL NEED:

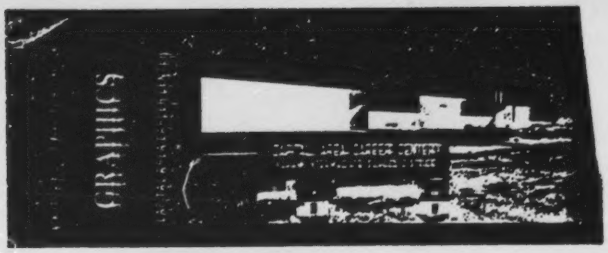
A LIGHT TABLE
LINE GAUGE AND TRIANGLE
X-ACTO KNIFE AND RAZOR BLADE
PUNCH
T-SQUARE
SCISSORS
OPAQUE BRUSH
ROMSEY FILM SCRIBER
BALL POINT PEN
GLASS CLEANER
PLATEBURNER
OPAQUE
TAPE (RED AND MASKING)
REGISTER PINS
NEGATIVES - PROJECT #13
TWO 5" X 8" MASKING SHEETS
SILVERPRINT PAPER

WE WILL KNOW YOU CAN DO IT WHEN:

1. THE SURPRINT (OVERPRINT) IS SOLID AND SHARP.
2. THE REVERSE TYPE IS CLEAN, FREE OF ANY DOTS AND LOCATED IN A DARKER AREA OF THE PICTURE.
3. THE BLOCK-OUT IS CLEAN AND THE NORMAL TYPE INSIDE IS SHARP.
4. THE PROOF IS CLEAN, FLAT AND DARK, FREE OF WRINKLES AND SHOWS CLEARLY HOW EVERYTHING WILL PRINT.

A TAPE OF THIS MODULE IS AVAILABLE.

WORD GUIDE



REVERSE - IN GRAPHICS, IT IS WHITE LETTERS ON A DARK BACKGROUND. IN TWO COLOR WORK, WHERE ONE COLOR WOULD CONTAMINATE (PRODUCE A THIRD COLOR, LIKE BLUE & YELLOW - GREEN) A REVERSE IS NECESSARY SO THE SECOND COLOR DOES NOT MIX WITH THE FIRST. REVERSES ARE USUALLY MADE BY CONTACT PRINTING IN THE DARKROOM BUT IT IS POSSIBLE TO MAKE A REVERSE ON THE PLATEBURNER, UNDER YELLOW LIGHT (MOD #1401 10 013 "AUTOPOSITIVE" IN THE CAMERA UNIT).

COMBINATION - A COMBINATION IS PRODUCED WHEN PICTURES AND TYPE ARE INCLUDED TOGETHER. THE PICTURES CAN BE PHOTOGRAPHS OR DRAWINGS AND THE TYPE CAN BE ANY TYPE OF CHARACTERS, SYMBOLS, OR OFTEN, EVEN ARROWS OR SUBHEADS. ANY TYPE OF COMBINATION REQUIRES EXTRA WORK. ON LARGE STRIPPING JOBS, THE STRIPPER WOULD OFTEN MAKE EACH COMBINATION SEPARATELY, THEN DOUBLE-BURN THESE ONTO A PIECE OF DUPLICATING FILM SO THE LARGE FLAT WOULD ONLY REQUIRE ONE BURN (MOD #1401 10 012 "DUPLICATING FILM", CAMERA UNIT).

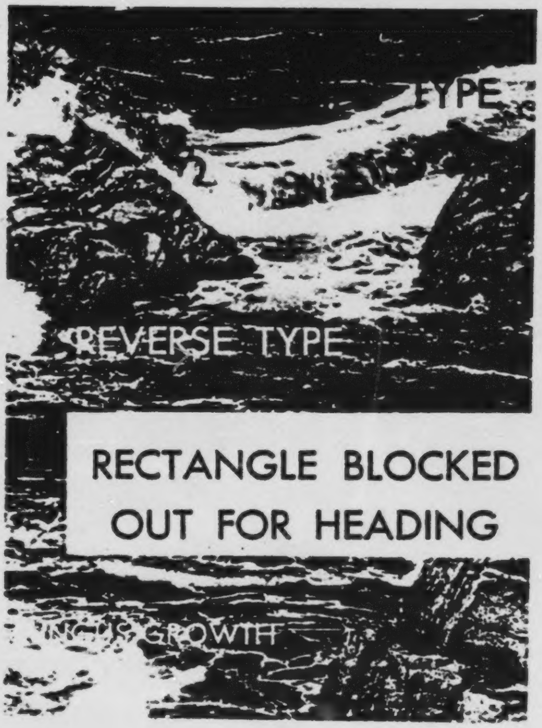
INFORMATION

A "COMBINATION" PRINT IS ONE WHICH LINEWORK AND A HALFTONE APPEAR TOGETHER. THE LINEWORK MAY BE:

1. A REVERSE (WHITE LETTERS);
2. A SURPRINT (OVERPRINT BLACK LETTERS ON THE HALFTONE); OR
3. A BLOCKED OUT AREA (A CLEAR BOX WITH BLACK LETTERS IN IT).

THE HALFTONES ARE PRODUCED AS NORMAL. IF YOU WILL BE OVERPRINTING TYPE, YOU WILL NEED TWO FLATS AND YOU MUST DOUBLE-BURN THE PLATE OR ELSE MAKE A DUPLICATE NEGATIVE WITH A DOUBLE BURN SO THIS DUPLICATE NEGATIVE CAN TAKE THE PLACE OF THE HALFTONE. FOR REVERSE LETTERING, YOU WILL NEED A POSITIVE (CONTACT PRINT A NEGATIVE TO A PIECE OF FILM) WHICH YOU SHOULD LAY ON THE HALFTONE DURING EXPOSURE.

INFORMATION



NOTICE, IN THE EXAMPLE TO THE RIGHT, THE TOP LINE OF "OVERPRINT TYPE" IS NORMAL BLACK LETTERING SUPERIMPOSED (PUT OVER) ON THE PICTURE. THE FIRST WORK IS ON A DARK BACKGROUND AND IS HARD TO READ. ALWAYS TRY AND PLACE THIS OVERPRINT ON A LIGHT BACKGROUND SO IT IS EASIER READING.

THE SECOND LINE, "REVERSE TYPE" IS EASY TO READ. IT WAS PLACED ON A DARKER BACKGROUND SO THE WORD LOOKS BEST IN A DARK AREA. THE LAST LINE ON THIS SAMPLE, "FUNGUS GROWTH", IS DIFFICULT TO SEE BECAUSE OF THE LIGHT BACKGROUND.

THE LARGE RECTANGLE IS BLOCKED OUT AND THE NORMAL BLACK LETTERING IS DOUBLE-BURNED ON IT THROUGH A NORMAL NEGATIVE. IF THE LETTERING IS NOT CENTERED, IT IS VERY NOTICABLE.

A HALFTONE NEGATIVE AND BE SCRATCHED ON THE EMULSION SIDE FOR REVERSE MARKING. ON THE TOP (BASE SIDE, RIGHT READING) OF THE HALFTONE, YOU CAN WRITE OR DRAW WITH OPAQUE, INDIA INK, OR USE PRESS-TYPE TO GET REVERSE LETTERING.

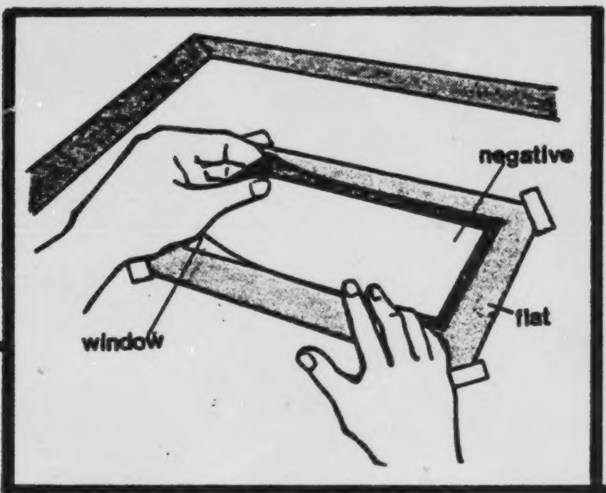
JOB STEPS

1. TAKE ALL EQUIPMENT AND MATERIALS TO YOUR WORK AREA.

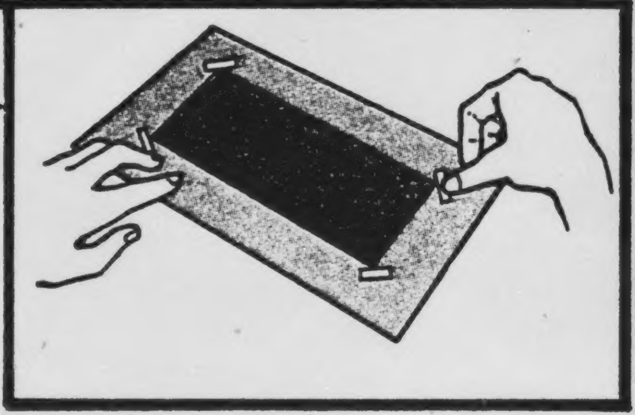
2. SELECT AND CLEAN A LIGHT TABLE AND THEN GET THE NEGATIVE FOR THIS STRIPPING PROJECT #13: "COMBINATIONS".

3. CUT AND CENTER A RECTANGULAR (2 1/2" X 6") WINDOW IN ONE OF THE 5" X 8" MASKING SHEETS. BE SURE TO TAPE THE MASKING SHEET SECURELY. USE A SHARP RAZOR BLADE AND CUT SLIGHTLY BEYOND YOUR MARKS FOR A CLEAN CUT.

4. STRIP THE HALFTONE PART OF THE NEGATIVE INTO THE WINDOW (EMULSION UP) AND KEEP ANY TAPE ON THE EMULSION SIDE AT LEAST 1/4" AWAY FROM THE WINDOW.



5. TURN OVER THIS FLAT AND PLACE A PIECE OF RED LITHO TAPE DIAGONALLY AT EACH CORNER TO KEEP ANY OF THE RAZOR CUT LINES FROM SHOWING. CHECK TO BE SURE IT DOES NOT CUT THE CORNER OF THE HALFTONE.



6. PIN REGISTER THE SECOND 5" X 8" MASKING SHEET TO THIS HALFTONE FLAT AND TAPE THE PINS TO THE LIGHT TABLE SO THE SHEETS ARE SQUARE.

7. EXAMINE THE SAMPLE BELOW TO SEE EXACTLY WHAT IS REQUIRED AND WHAT YOUR PROJECT WILL LOOK LIKE WHEN FINISHED. THERE ARE FIVE PARTS TO THIS NEW MOD:

A. OVERPRINT, "GRAPHICS": NORMAL BLACK LETTERING ON THE HALFTONE.

B. REVERSE, "YOUR NAME": WHITE LETTERS IN A DARK AREA.

C. BLOCKED OUT AREA, "CACC": BLACK LETTERS IN A WHITE RECTANGLE.

D. BLACK BOX, "RECTANGLE": BOX SCRIBED IN EMULSION WITH SCRIBERS.

E. REVERSE, "TODAYS DATE': DATE WRITTEN WITH OPAQUE.

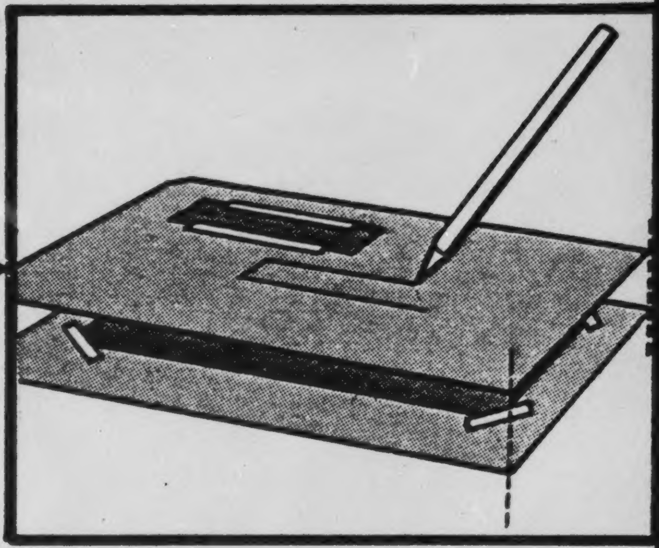
WORD GUIDE

SCRIBE - MARK A LINE BY CUTTING OR SCRATCHING.

JOB STEPS

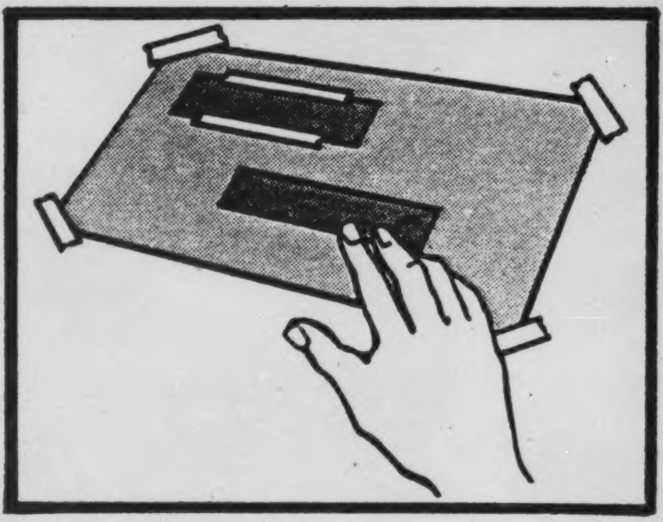
8. KEEP THE SECOND MASKING SHEET IN REGISTER AND WITH THE HALFTONE FLAT, MARK OUT WHERE YOU WANT THE WORD "GRAPHICS" TO APPEAR. IT SHOULD BE IN THE UPPER RIGHT SKY, ABOUT 1/4" DOWN AND 1/2" FROM THE RIGHT (AS YOU PRINT). REMEMBER: YOU ARE WORKING IN REVERSE. REMOVE THE SECOND MASKING SHEET BEFORE YOU CUT THIS WINDOW, THEN STRIP IN THE NEGATIVE FOR THE WORD "GRAPHICS". CHECK YOUR POSITIONING BY LOOKING THROUGH THE HALFTONE NEGATIVE AS YOU HOLD THE TWO FLATS TOGETHER (RIGHT READING).

9. WITH THE SECOND FLAT IN REGISTER AND THE HALFTONE FLAT BELOW IT, MARK OUT WHERE YOU WANT THE BLOCKED-OUT AREA OVER THE SIGN. THIS LARGE BLOCK-OUT MUST BE EXACT. AGAIN, REMOVE THE SECOND FLAT WHILE CUTTING AND CUT VERY CLEAN. STRIP-IN THE NEGATIVE FOR THE CENTER TITLE IN THIS WINDOW AND SAVE THE WINDOW YOU REMOVED FOR THE NEXT STEP. CHECK YOUR POSITIONING WITH THE NEGATIVE FLAT.



10. WITH THE HALFTONE FLAT RIGHT READING (BASE SIDE UP), BLOCK OUT THE FACE OF THE SIGN. THIS CAN BE DONE ANY OF FOUR WAYS:

A. MASKING SHEET WINDOW BLOCK: TAKE THE REMOVED WINDOW FROM THE SECOND FLAT AND PLACE THIS EXACTLY IN THE SIGN FACE (USE JUST A LITTLE GLUE OR ELSE PUNCH A COUPLE 1/4" HOLES AND COVER THESE WITH 1/2" RED LITHO TAPE TO HOLD IT IN PLACE). FASTEST AND SIMPLEST.

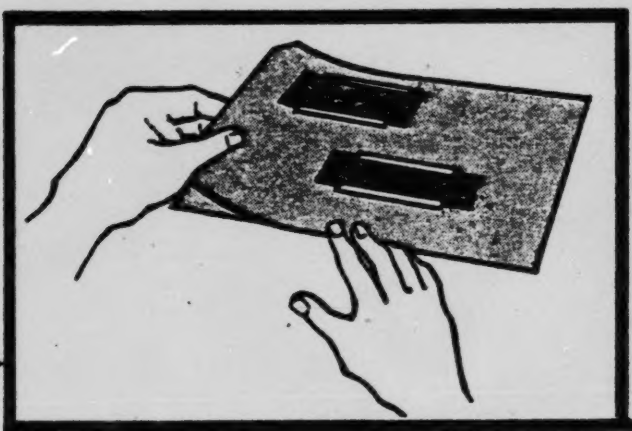


B. OPAQUE BLOCK: CAREFULLY BRUSH ON OPAQUE TO COMPLETELY COVER THE SIGN.

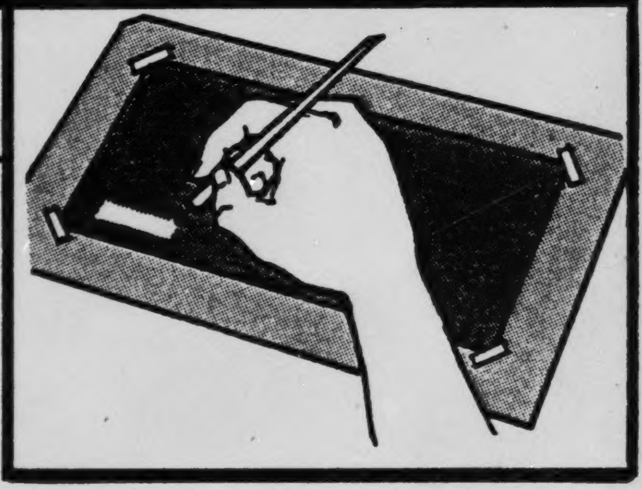
JOB STEPS

C. TAPE BLOCK: COVER THE SIGN FACE WITH 1/2" RED LITHO TAPE AND TRIM THE EXCESS WITH A RAZOR BLADE.

D. RUBYLITH BLOCK: CUT A SHEET OF RUBYLITH LARGE ENOUGH TO COMPLETELY COVER THE ENTIRE HALFTONE WINDOW AND THEN REMOVE ALL THE EMULSION, EXCEPT AT THE SIGN FACE. IF THE AREA TO REMAIN COVERED IS ODDLY SHAPED AND TRICKY, RUBYLITH IS THE MOST ACCURATE METHOD THOUGH ALSO THE SLOWEST.



11. IN THE LOWER RIGHT CORNER (AS YOU LOOK AT THE FINAL PRINT), SCRIBE A BOX WITH THE FILM SCRIBERS ON THE EMULSION SIDE. THE BOX SHOULD BE EXACTLY 1CM BY 3CM.



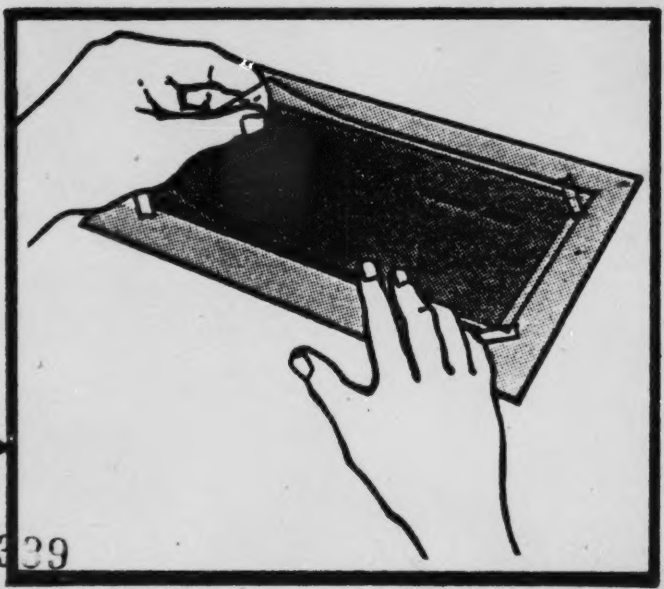
12. ON THE BASE SIDE, INSIDE OF THE BOX IN WHICH YOU SCRIBED, WRITE TODAYS DATE. THIS CAN BE DONE IN TWO WAYS:

A. OPAQUE: USE A THIN BRUSH AND THICK OPAQUE.

B. INDIA INK: USING THE INDIA INK PENS, SIMPLE WRITE THE DATE. THE INK IS THICK AND OPAQUE, SO IT WILL COMPLETELY BLOCK OUT THE LIGHT.

13. ON THE SIDE OF THE BUILDING (ON THE HALFTONE FLAT), PUT YOUR NAME IN REVERSE LETTERING. THERE IS ENOUGH ROOM FOR ABOUT 12-15 CHARACTERS IN 1/4" HIGH TYPE ON THE BUILDING (LEFT SIDE OF PICTURE). THERE ARE TWO WAYS TO DO THIS REVERSE LETTERING:

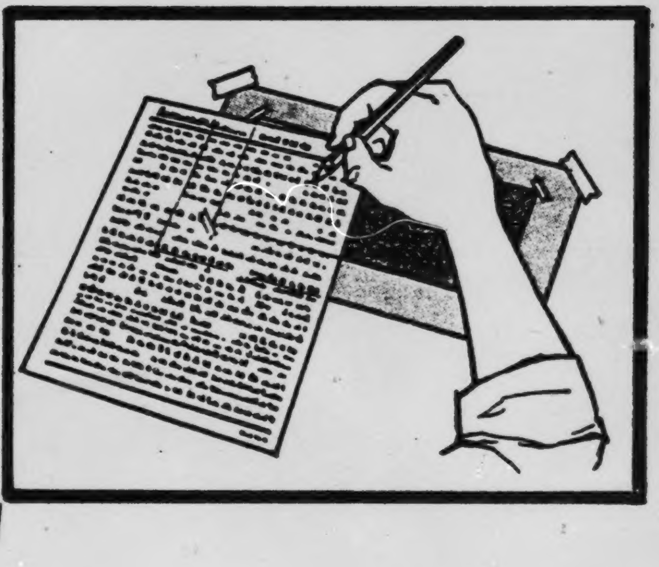
A. SET THE TYPE BY ANY METHOD AND MAKE A NEGATIVE. THEN CONTACT PRINT A PIECE OF FILM TO THIS NEGATIVE AND DEVELOP THIS FILM INTO A POSITIVE. THE CLEAR AREA OF THE POSITIVE MUST BE LARGE ENOUGH TO COMPLETELY



JOB STEPS

COVER THE ENTIRE HALFTONE WINDOW OR IT WILL LEAVE A LIGHT FILM EDGE LINE THROUGH THE HALFTONE.

B. A QUICK AND SIMPLE METHOD IS TO USE PRESS-TYPE OR TRANSFER-TYPE DIRECTLY ON THE HALFTONE. MOD #1401 08 020: "PRESS-TYPE" TELLS HOW TO DO THIS. BASICALLY, POSITION EACH CHARACTER WHERE YOU WANT IT AND GENTLY RUB THAT CHARACTER WITH A SOFT PENCIL UNTIL IT STICKS TO THE HALFTONE BASE. HAVE SOMEONE IN COMPOSITION HELP YOU, IF YOU HAVE NOT DONE THIS BEFORE. BE SURE TO CHECK FIRST TO SEE IF ALL YOUR CHARACTERS WILL FIT INTO THE SPACE AVAILABLE. ONCE YOU HAVE THIS TYPE OF LETTERING ON THE NEGATIVE, BE CAREFUL THAT YOU DO NOT RUB OR SCRATCH OFF THIS PRESSTYPE.



14. DOUBLE-CHECK YOUR FINISHED FLATS WITH THE SAMPLE ON THE PREVIOUS PAGE TO BE SURE YOU HAVE INCLUDED EVERYTHING.

15. WITH THE PIN REGISTER SYSTEM, MAKE A SILVERPRINT PROOF (8 1/2" X 11"). AGAIN, CHECK TO SEE IF EVERYTHING IS CORRECT. MOUNT THIS PROJECT FOR YOUR REFERENCE AND HAVE THE INSTRUCTOR OR MANAGER CHECK YOUR WORK.

16. CLEAN YOUR WORK AREA. CHECK WITH YOUR INSTRUCTOR TO FIND OUT THE MOD PROJECT YOU SHOULD DO NEXT.

graphics

unit: STRIPPING

capital area career center

module: 1401 11 014
1401 11 014 3 date: JULY 1977 level:

skill title: MULTIPLE IMPOSITION: 16 PAGE FOLDER

developed & written by: GLEN PETTIT AND REVISED BY DWIGHT HORNER

visuals by: BRUCE BENNETT

WORD GUIDE

DUMMY - THIS IS A "WORKING BLUEPRINT" OF A JOB. IT IS USUALLY ROUGH BUT WILL SHOW BASICALLY HOW A JOB WILL LOOK. OTHER FUNCTIONS OF A DUMMY ARE TO SHOW THE EXACT PAGE IMPOSITION AND WHERE THE JOB MAY BE TRIMMED OR FOLDED

TRIM DIAGRAM - THIS IS ALSO A "WORKING BLUEPRINT" OF THE JOB. LIKE THE DUMMY, A TRIM DIAGRAM IS USUALLY FLAT AND HAS ALL THE TRIM AND FOLD LINES DRAWN ON IT. IT IS USUALLY THE SAME SIZE AS THE FLAT OR P.S.S. AND WILL CONTAIN NOTES WHERE TO PUT THE TRIM AND FOLD MARKS, REGISTER MARKS, ETC. USUALLY, ALL SIZES AND DISTANCES ARE INDICATED, TOO.

PERFORMANCE OBJECTIVE

YOU ARE GOING TO LEARN:

1. HOW TO DETERMINE THE PROPER IMPOSITION BY MAKING YOUR OWN DUMMY AND TRIM DIAGRAM.
2. HOW TO STRIP-UP THE TWO LARGE FLATS WITH EIGHT PAGES EACH IN PROPER POSITION.
3. HOW TO MAKE A SILVERPRINT PROOF TO CHECK POSITIONING.

IN ORDER TO DO THIS YOU WILL NEED:

- A LARGE LIGHT TABLE
- LINE GAUGE AND TRIANGLE
- X-ACTO KNIFE & RAZOR BLADE
- PUNCH
- T-SQUARE
- SCISSORS
- OPAQUE BRUSH
- FINE SCRIBER
- BALL POINT PEN
- GLASS CLEANER
- PLATEBURNER
- OPAQUE
- TAPE (RED & MASKING)
- REGISTER PINS
- NEGATIVES - PROJECT #14
- LARGE MASKING SHEETS (22" X 25")
- COTTON PADS
- SILVERPRINT PAPER

WORD GUIDE

SCRIBED - MARKING BY CUTTING OR SCRATCHING

ACCURATELY - EXACTLY

WE WILL KNOW YOU CAN DO IT WHEN:

1. THE TWO FLATS ARE STRIPPED-UP IN REGISTER WITH P.S.S. LINES, F.T.S. LINES AND ALL NEGATIVES ARE PROPERLY STRIPPED-UP, OPAQUED AND STRAIGHT.
2. THE FOLD MARKS AND TRIM MARKS ARE POSITIONED ON THE FLATS AND SCRIBED PROPERLY.
3. THE FINAL SILVERPRINT PROOF SHOWS ACCURATELY WHAT THE FINAL JOB WILL LOOK LIKE.
   (AVERAGE TIME: 2 1/2 HOURS)

A TAPE OF THIS MODULE IS AVAILABLE.

INFORMATION

BOOKS OR MAGAZINES ARE PRINTED IN UNITS OF SEVERAL PAGES PER SHEET. THERE MAY BE ANYWHERE FROM 4 TO 64 PAGES PER SHEET (OR ON EACH SIDE OF THE SHEET), DEPENDING ON WHAT SIZE SHEET THE PRESS CAN PRINT. A LARGE PRESS CAN PRINT MANY FORMS AT ONCE AND USUALLY HAS A HIGHER PRESS SPEED, MAKING IT CHEAPER TO RUN LARGE SHEETS. IMPOSITION IS THE PLACING OF PAGES IN A FORM OR FLAT SO THEY WILL BE IN THE PROPER SEQUENCE AFTER THE SHEET IS PRINTED AND FOLDED.

A "STRIPPER" IS A PERSON WHO ARRANGES THE PAGES IN THE PROPER SEQUENCE ON THE FORM OR FLAT. THE STRIPPER WILL TRIM THE NEGATIVES TO SIZE SO THEY CAN BE SPLICED TOGETHER ON A LARGE FLAT.

IN THE BOOKLET, POCKET PAL, YOU'LL FIND SEVERAL IMPOSITION LAYOUTS. EXAMINE THESE.

THE COMPLETED AND FOLDED SHEET WILL HAVE TO BE TRIMMED AFTER IT IS STITCHED (STAPLED). BECAUSE MANY SHEETS OR PAGES ARE STAPLED TOGETHER AND EACH INSIDE SHEET IS SHOVED OUT JUST A LITTLE, THE EDGES ARE NOT EVEN. USUALLY, THE STRIPPER WILL TAKE THIS INTO CONSIDERATION ON LARGER BOOKLETS (32 PAGES OR LARGER) BY CAREFULLY POSITIONING THE IMAGES SO THEY WILL APPEAR TO HAVE EVEN MARGINS. IF YOU TAKE A LARGE MAGAZINE THAT HAS BEEN SADDLE STITCHED (LIKE PLAYBOY) AND MEASURE THE CENTER GUTTER WHERE THE STITCHES ARE, YOU MAY NOTICE A 1/4" DIFFERENCE BETWEEN THE INSIDE AND OUTSIDE PAGES. THE OUTSIDE GUTTERS ALL APPEAR THE SAME. ON THE SAME MAGAZINE, THE ACTUAL PAGE SIZE FLAT MAY SHOW A FULL 1/2" DIFFERENCE.

WORD GUIDE

SHINGLING - AS THE PAGES IN A MAGAZINE BULGE OUT AND IT GETS THICKER, THE INSIDE PAGES WILL APPEAR TO BE LONGER. FOR LARGE BOOKLETS, THE STRIPPER MUST TAKE INTO ACCOUNT THIS EFFECT AND CORRECT FOR IT IN POSITIONING NEGATIVES ON THE FLATS

SIGNATURE - A GROUP OF SHEETS BOUND TOGETHER.

INFORMATION

YOU CAN DETERMINE THE ACTUAL AMOUNT OF SHINGLING BY TAKING THE SAME NUMBER OF SHEETS OR PAGES OF ACTUAL STOCK, FOLDING AND STITCHING THEM, AND THEN MAKING A CUT NEAR THE EDGE WITH A PIN AND THEN RAZOR BLADE OR DRILL THROUGH ALL THE SHEETS AT ONCE. BY MEASURING THE DISTANCE BETWEEN THESE CUTS YOU SEE WHAT THE ACTUAL DISTANCE SHOULD BE WHILE STRIPPING LARGE SIGNATURES. BE SURE YOU EXAMINE A LARGE MAGAZINE TO UNDERSTAND WHAT IS MEANT HERE.

IN ALL PAMPHLETS, BOOKS, AND MAGAZINES THE ODD NUMBER PAGE WILL ALWAYS BE ON THE RIGHT AND THE EVEN NUMBER PAGE IS ALWAYS ON THE LEFT SIDE AS YOU LOOK AT AN OPEN BOOK. ALWAYS MAKE A DUMMY OF ANY IMPOSITION JOB, AS THIS IS ESSENTIAL FOR LARGER JOBS LIKE THE ONE IN THIS MOD. A SIMPLE METHOD OF DOUBLE-CHECKING PROPER PAGE NUMBERING IS TO ADD ANY TWO PAGES SIDE-BY-SIDE IN STRIPPING. THE TOTAL SHOULD BE JUST ONE MORE THAN THE TOTAL NUMBER OF PAGES FOR THE JOB (1 + 16 = 17, 2 + 15 = 17, 3 + 14 = 17, 4 + 13 = 17, ETC; THIS WOULD BE A 16 PAGE BOOK).

INFORMATION

THERE ARE MANY WAYS A JOB CAN GO THROUGH THE FOLDER AND THIS IS ALSO A FACTOR IN HOW THE JOB WILL BE IMPOSED. ANY TIME THE FOLD MUST CHANGE DIRECTIONS, AN ADDITIONAL ATTACHMENT FOR THE FOLDER IS NECESSARY (RIGHT-ANGLE FOLDER ATTACHMENT).
USUALLY, PRINT SHOPS WILL HAVE TWO RIGHT-ANGLE ATTACHMENTS. BY TAKING A LARGE SHEET AND FOLDING IT AS DESIRED, YOU CAN DETERMINE WHAT IS NEEDED. HAVE THE INSTRUCTOR/MANAGER (OR SOMEONE WHO HAS DONE THIS BEFORE) EXPLAIN WHAT IS POSSIBLE. DO THIS BEFORE GOING ANY FURTHER (TALK ABOUT 16 PAGE FOLDS AND RIGHT-ANGLE FOLDS).

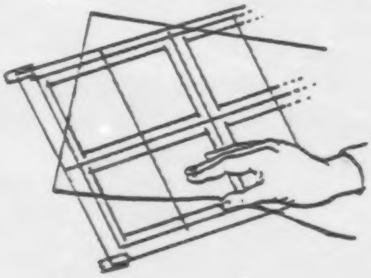
TO DETERMINE TRIM, ADD 1/8" TO 1/4" TO THE TOP, SIDE AND BOTTOM OF EACH PAGE. EACH PAGE WILL HAVE ONE SIDE WHICH IS FOLDED, AND THREE SIDES WITH TRIMS (ODD PAGES WILL FOLD ON LEFT AND EVEN PAGES FOLD ON THE RIGHT). ON LARGER BOOKS, YOU MUST TAKE ENOUGH TRIM ON THE SIDE TO ELIMINATE ALL SHINGLING. ON THE DUMMY IT MAY HELP TO TEAR OR CUT A SMALL NOTCH IN THE 3 SIDES TO BE TRIMMED LATER.

FOR THIS JOB, YOU WILL BE STRIPPING TWO LARGE FLATS WITH EIGHT NEGATIVES EACH. YOU WILL MAKE A TWO-SIDED SILVERPRINT PROOF TO CHECK REGISTER AND IT WILL BE NECESSARY TO USE ONE OF THE EXTRA LARGE LIGHT TABLES FOR THIS. BE SURE YOU MAKE AN ACCURATE DUMMY AND DOUBLE-CHECK IT CAREFULLY BEFORE STARTING.

BECAUSE THE COST FOR THIS MOD IS HIGH ($6 TO $8), YOU MAY BE USING THE SAME NEGATIVES SOMEONE ELSE HAS. THE NEGATIVES SHOULD BE CAREFULLY WASHED AND DRIED. ALSO REMOVE ANY PIECES OF TAPE. MAKE YOUR OWN TRIM MARKS FROM SCRAP FILM WITH THE FINE SCRIBER.

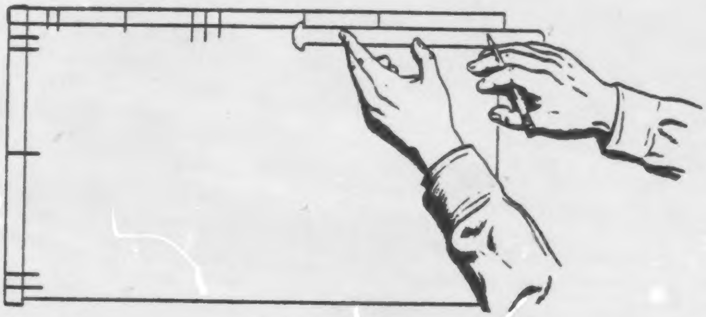
IF YOU HAVE A LARGE NUMBER OF FLATS LIKE THIS TO DO, YOU MAY MAKE A MASTER REGISTER SHEET:

1. TAPE A THIN PIECE OF PAPER OR PLASTIC TO THE LIGHT TABLE WITH ALL THE NECESSARY MARKS ON IT. PLACE THE MASKING SHEET ON THIS AND EITHER RE-DRAW ALL THE LINES OR (IF YOU ARE CAREFUL) STRIP THE NEGATIVES WHILE LOOKING THROUGH THIS MASKING SHEET AND REGISTER SHEET.



INFORMATION

2. WHERE THE MASKING SHEET IS ON THE LIGHT TABLE, TAPE THE SIDE AND TOP AND PLACE MARKS ON THE EDGE TO SHOW WHERE THE IMPORTANT LINES MUST BE DRAWN.



3. USE PRE-PRINTED MASKING SHEETS.

IT IS A GOOD IDEA TO MARK THE PAGE NUMBERS WITH A BOLD MARKER ON THE FLATS SO YOU ARE SURE OF THE PAGE IMPOSITION. SOMETIMES, ONE MASKING SHEET (WITH THE WINDOWS CUT) CAN BE USED FOR ALL FLATS. THE NEGATIVES WOULD BE TAPED-IN FOR EACH BURN AND EXCHANGED ON SUCCESSIVE BURNS (THIS WAY YOU ARE SURE ALL REGISTER MARKS WILL BE EXACT). SOMETIMES, EVERY PLATE IS MADE WITH A DOUBLE BURN, ONE FOR THE PAGES AND ONE FOR THE REGISTER MARKS. EACH JOB AND EACH SHOP HAS ITS OWN SET OF STANDARDS. USUALLY, HIGHER QUALITY AND ACCURACY REQUIRES MUCH MORE EFFORT ON THE PART OF THE STRIPPER THAN ON ANYONE ELSE SO YOU MUST UNDERSTAND WHAT IS WANTED BEFORE YOU START.

WORD GUIDE

"DOG-EAR" - TEARING OUT A SMALL PIECE

JOB STEPS

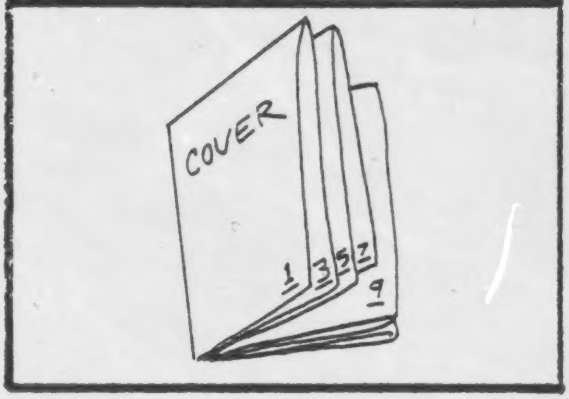
1. TAKE ALL EQUIPMENT AND MATERIALS TO YOUR WORK AREA.

2. SELECT AND CLEAR A LARGE LIGHT TABLE (YOU WILL BE WORKING WITH 22" X 25" FLATS).

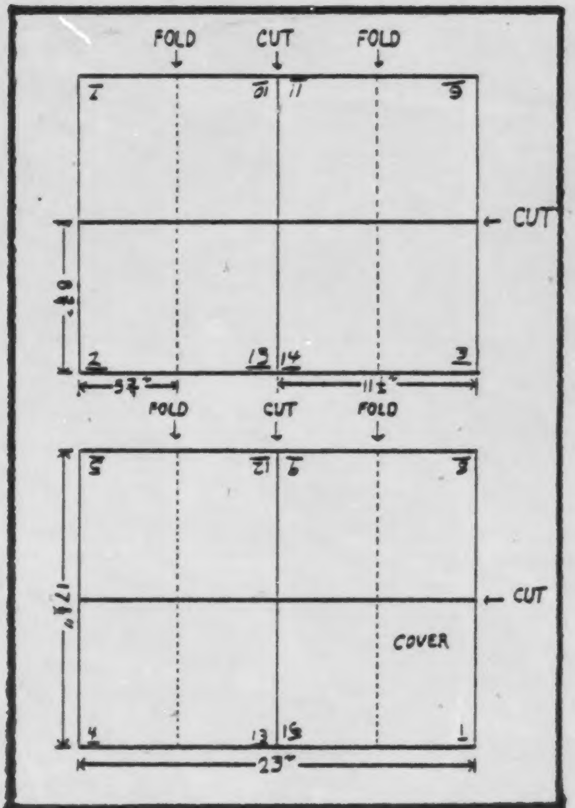
3. GET FOUR SHEETS OF 8 1/2 X 11" BLANK PAPER, FOLD THEM TO 5 1/2 X 8 1/2" AND STAPLE THEM TWICE ON THE 8 1/2" FOLD LINE TO MAKE A DUMMY.
4. NEAR THE LOWER OUTSIDE CORNER, NUMBER EACH PAGE WITH LARGE BOLD NUMBERS (THE COVER IS PAGE ONE AND THE OUTSIDE BACK PAGE IS SIXTEEN).

5. FOLD A PIECE OF OFFSET PAPER (17 1/2 X 23") INTO EIGHT PARTS (IN 1/2, IN 1/2, AND IN 1/2). FOLD THE LEFT SIDE COMPLETELY. FOLD THE TOP TWICE, LEAVE THE RIGHT SIDE HALF-OPEN AND HALF FOLDED, AND THE BOTTOM SIDE COMPLETELY OPEN (NO FOLDS).

6. IN THE LOWER OUTSIDE CORNERS, NUMBER EACH PAGE (THE COVER IS NUMBER ONE). BE SURE TO UNDERLINE THE PAGE NUMBERS, AS THE 6 AND 9 PAGE MAY GET CONFUSING.



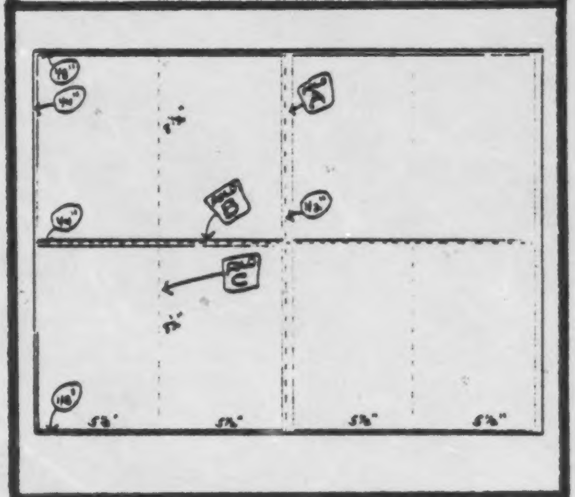
JOB STEPS



7. OPEN UP THE LARGE DUMMY TO SEE THE PROPER PAGE IMPOSITION FOR THE ENTIRE JOB (ONE FLAT FOR EACH SIDE). AGAIN, FOLD THE LARGE DUMMY AND, WITH THE FOLDED EDGE (THE ONE WHICH WILL BE STITCHED) TO THE LEFT, "DOG-EAR" EACH SIDE WHICH WILL BE TRIMMED. WITH THE DUMMY OPEN AGAIN, YOU CAN EASILY SEE WHICH SIDES ARE FOLDED AND WHICH ARE TRIMMED.

8. CHECK THE PAGE NUMBERING; THE TOTAL OF THE TWO PAGES ON EACH SIDE OF EACH FOLD SHOULD BE ONE MORE THAN THE TOTAL NUMBER OF PAGES (SHOULD TOTAL 17).

9. FOR THIS JOB, YOU NEED 1/8" TRIM FROM THE TOP AND BOTTOM OF EACH PAGE, AND 1/4" FROM THE SIDE OF EACH PAGE. FOR THE TRIM DIAGRAM, TAKE ANOTHER SHEET OF 17 1/2 X 23" OFFSET PAPER AND CAREFULLY DRAW IN ALL THE PAGE, TRIM AND FOLD LINES (AS SHOWN).

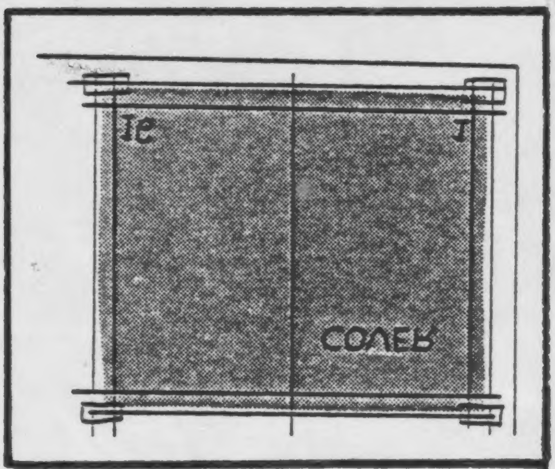


10. GET THE 22 X 25" MASKING SHEETS FOR THIS FLAT AND DRAW THE NECESSARY LAYOUT LINES FOR THIS JOB. ALLOW A 1" GRIPPER ON THE SIDE TOWARD YOU AND CENTER THE PSS ON THE MASKING SHEET WIDTH (GRIPPER SIDE RUNS THE 23" EDGE).

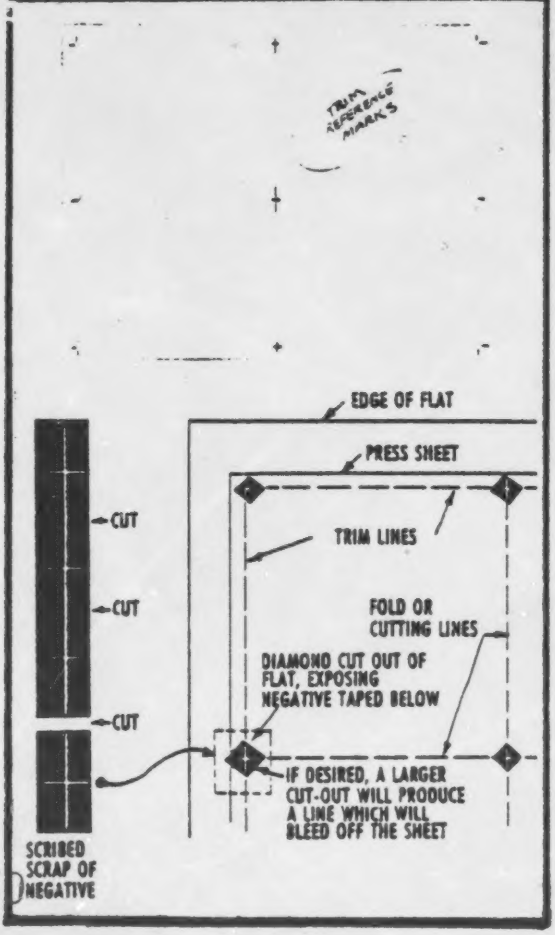
JOB STEPS

11. GET THE SET OF SIXTEEN NEGATIVES FOR THIS JOB, CLEAN AND STRIP THEM UP IN THEIR RESPECTIVE POSITIONS ON THE MASKING SHEETS (CENTERED IN EACH PAGE SIZE, 5 1/2 X 8 1/2").

12. NOTICE THAT THE COVER AND BACK PAGES ARE NOT NUMBERED: THEY BLEED ON ALL FOUR SIDES (RUN TOGETHER ON THE FOLD). LEAVE THESE TOGETHER AND CUT THE WINDOW LARGE ENOUGH SO THEY WILL BLEED OFF THE FTS ABOUT 1/16". →



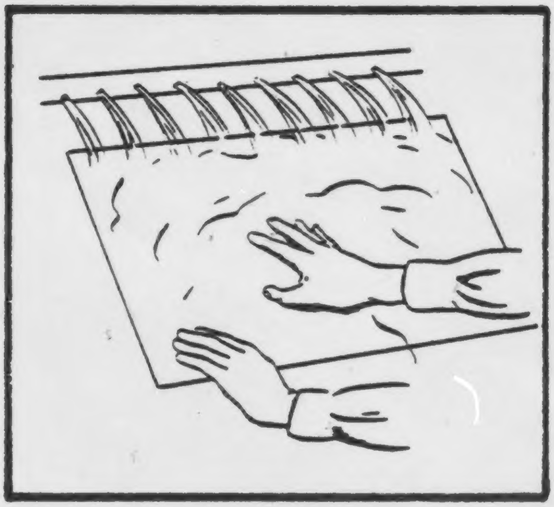
13. THIS JOB SHOULD HAVE NINE TRIM (FOLD) MARKS (SEE ILLUSTRATION) TO TELL THE PRESS OPERATOR WHERE TO POSITION AND THE BINDERY MEN WHERE TO FOLD AND TO TRIM THE PRESS SHEET. USING SCRAP PIECES OF NEGATIVES, CUT SMALL PIECES AND TAPE THESE IN THE NINE SPOTS SHOWN. THEN, SCRIBE SHORT REFERENCE MARKS TO INDICATE THESE NECESSARY MARKS (THEY MUST BE IN THE TRIM MARGINS). →


TRIM REFERENCE MARKS
EDGE OF FLAT
PRESS SHEET
TRIM LINES
CUT
CUT
CUT
FOLD OR CUTTING LINES
DIAMOND CUT OUT OF FLAT, EXPOSING NEGATIVE TAPED BELOW
IF DESIRED, A LARGER CUT-OUT WILL PRODUCE A LINE WHICH WILL BLEED OFF THE SHEET
SCRIBED SCRAP OF NEGATIVE

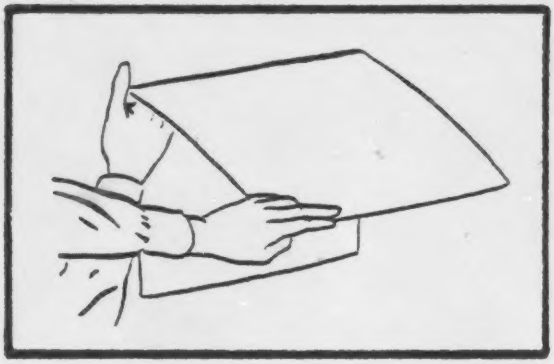
14. CUT THE WINDOWS, OPAQUE AND MAKE A DOUBLE-CHECK WITH THE LARGE DUMMIES ON IMPOSITIONS. BE SURE ALL 9 TRIM REGISTER MARKS SHOW.

JOB STEPS

15. MAKE A LARGE SILVERPRINT PROOF:
    - A. CUT SOME LARGE, DOUBLE-SIDED, SILVERPRINT PAPER TO THE PRESS-SHEET SIZE (17 1/2" X 23") AND TAPE IT IN PLACE WITH MASKING TAPE.
    - B. EXPOSE AND PROCESS. THIS MAY BE TOO LARGE FOR THE TRAYS TO FIX, SO TO REPAIR, POUR SOME FIXER ON A COTTON PAD AND COMPLETELY WASH THE PAPER IN IT FOR SEVERAL MINUTES (IT MAY BE NECESSARY TO USE 2 OR 3 COTTON PADS OR POSSIBLY A SMALL SPONGE). DO THIS FIXING IN THE PLATE WASH SINK AND BE SURE TO FIRST DEVELOP BOTH SIDES IN RUNNING WATER. BE CAREFUL WITH THE SQUEEGEE AS IT IS VERY EASY TO TEAR A SHEET THIS LARGE. →



16. ON A DRY TWO-SIDED PROOF, DRAW YOUR FOLD AND TRIM LINES AND THEN FOLD THE SILVERPRINT PROOF CAREFULLY. HAVE THE INSTRUCTOR CAREFULLY CHECK YOUR PROOF FOR ACCURACY AND EXAMINE THE FLATS. KEEP THE SILVERPRINT PROOF FOR YOUR NOTES. →



17. REMOVE THE NEGATIVES FROM YOUR FLATS, WASH THE SIXTEEN NEGATIVES CAREFULLY, AND, WHEN DRY, RETURN THEM TO THE STRIPPING PROJECT ENVELOPE.

18. CLEAN UP YOUR WORKING AREA. CHECK WITH YOUR INSTRUCTOR TO FIND OUT WHAT MOD PROJECT YOU SHOULD DO NEXT.

graphics

unit: STRIPPING

capital area career center

module: 1401 11 015
1401 11 015 3 **date:** 7/77 **level:**

skill title: COMPLEX STRIPPING: FOUR-PAGE NEWSPAPER (8½" X 11")

developed & written by: GLEN PETTIT - REVISED BY DWIGHT HORNER

visuals by: CHUCK KNOCK

WORD GUIDE

STRIP-INS - SOMETIMES ON A LARGE NEGATIVE A WORD, LINE, OR GROUP MUST BE CHANGED; A PIECE OF THE LARGE NEGATIVE WILL BE REMOVED AND ANOTHER STRIPPED-IN IN THE CORRECT POSITION. BASICALLY, THE SAME AS STRIPPING-IN WINDOWS.

PERFORMANCE OBJECTIVE

YOU ARE GOING TO LEARN:

1. HOW TO STRIP-UP TWO FLATS OF TWO PAGES EACH.
2. HOW TO PREPARE THE CORRECT DUMMY EXACTLY POSITIONED AND OPAQUED FOR THIS FOUR-PAGE NEWSPAPER.

IN ORDER TO DO THIS YOU WILL NEED:

A LIGHT TABLE
LINE GAUGE AND TRIANGLE
X-ACTO KNIFE AND RAZOR BLADE
PUNCH
T-SQUARE
SCISSORS
OPAQUE BRUSH
GLASS CLEANER
SCRIBER
BALL POINT PEN
OPAQUE
TAPE (RED & MASKING)
REGISTER PINS
FOUR NEGATIVES FOR A NEWSPAPER
TWO MASKING SHEETS (11" X 18")
#20 BOND (8½" X 11")

WE WILL KNOW YOU CAN DO IT WHEN:

1. THE COMPLETED FOUR-PAGE NEWSPAPER IS EXACTLY POSITIONED ON THE P.S.S.
2. ALL PAGES ARE IN CORRECT SEQUENCE, STRAIGHT, CLEAN, AND COMPLETELY OPAQUED WHERE NECESSARY.
3. THE FLATS ARE MARKED AND READY FOR PLATES.
4. ALL NECESSARY CORRECTIONS, SCRIBING, STRIP-INS, OR ADDITIONAL WORK HAS BEEN DONE ACCORDING TO JOB SPECIFICATIONS.

(AVERAGE TIME: A SIMPLE PAPER SHOULD TAKE ABOUT 30 MINUTES)

A TAPE OF THIS MODULE IS AVAILABLE.

WORD GUIDE

LIVE - A JOB WHICH MUST BE COMPLETED SOON OR HAS A DEADLINE (WEEKLY NEWSPAPER) IS SAID TO BE A LIVE JOB. A DEAD JOB IS ONE THAT WILL NOT BE USED AGAIN, AND AN INACTIVE JOB IS ONE THAT MAY BE DONE AGAIN. A RUSH JOB MUST BE DONE WITHIN A FEW DAYS AND A STANDING JOB MAY BE DONE ANYTIME.

INFORMATION

USUALLY, THE ACTUAL COMPLETION OF THIS MOD WILL WAIT UNTIL THERE IS A "LIVE" NEWSPAPER IN PRODUCTION.

IT IS A GOOD IDEA TO ASK FOR FLATS FOR AN OLD NEWSPAPER, REMOVE THE NEGATIVES, WASH THEM FREE OF OPAQUE, REMOVE ANY TAPE, AND REQUEST NEW DIRECTION OR CHANGES. STRIP THESE UP FOR THIS MOD AS A PRACTICE JOB BEFORE DOING A "LIVE" NEWSPAPER.

THE FOLLOWING SPECIFICATIONS ARE NEEDED TO STRIP-UP THIS FOUR-PAGE SCHOOL NEWSPAPER:

PRESS SIZE - 11" X 17"
PRESS SHEET SIZE - 11" X 17"
NEWSPAPER PAGE SIZE - 8½" X 11"

SOMETIMES, THE HALFTONES ARE SHOT ON PMT PAPER AND PASTED-IN ON THE PASTE-UP. THEY MAY ALSO BE MADE ON FILM AND STRIPPED-IN OR A SPECIAL HALFTONE FLAT MADE TO DOUBLE-BURN THE PLATE. CHECK WITH YOUR INSTRUCTOR TO SEE WHICH METHOD WILL BE USED FOR THIS PAPER.

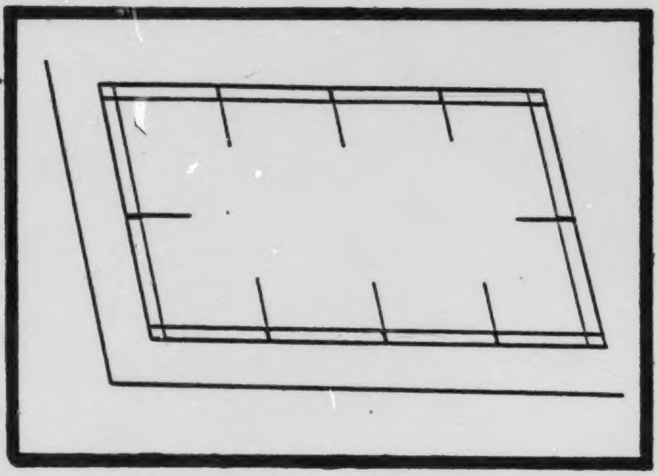
WORD GUIDE

PUTTING A NEWSPAPER TO BED - WHEN A NEWSPAPER OR JOB IS COMPLETELY COMPOSED, LAID-OUT, PASTED-UP, STRIPPED-UP, ETC., IT IS SAID TO BE "READY FOR BED". THIS IS AN OLD LETTERPRESS TERM. THE BED IS THE PLACE WHERE THE PLATES ARE LOCKED ON THE PRESS AND NEWSPAPERS WERE OFTEN RUN DURING THE NIGHT, AND SO THE TERM.

JOB STEPS

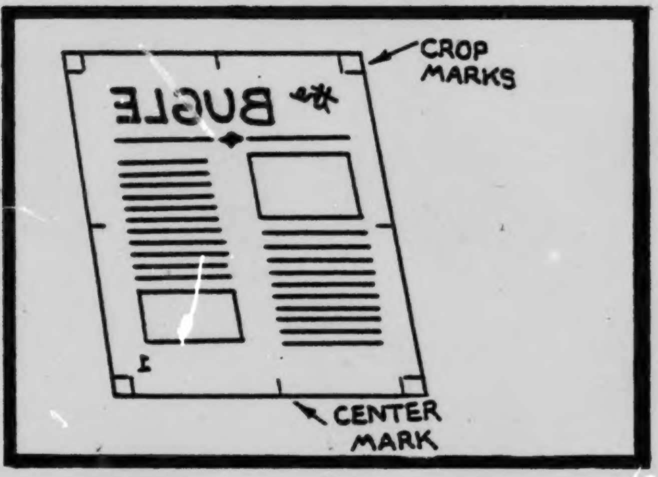
1. TAKE ALL EQUIPMENT AND MATERIALS TO YOUR WORK AREA.
2. CHOOSE AND CLEAN A LIGHT TABLE.
3. GET THE NEGATIVES FOR THIS SCHOOL NEWSPAPER. EXAMINE THEM CAREFULLY FOR QUALITY AND ALL NECESSARY IMAGE AREA.
4. MAKE A DUMMY FOR YOUR FOUR-PAGE NEWSPAPER.

5. LAYOUT YOUR MASKING SHEETS. WHEN USING THE MAXIMUM SIZE P.S.S. THE LEAD EDGE LINE IS ONLY 1/2" FROM THE EDGE OF THE MASKING SHEET. DOUBLE CHECK YOUR ACTUAL P.S.S. NORMALLY, IT IS 11" X 17".

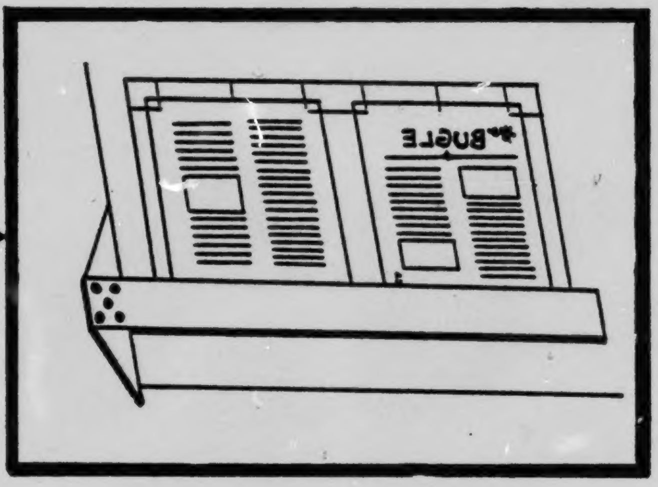


JOB STEPS

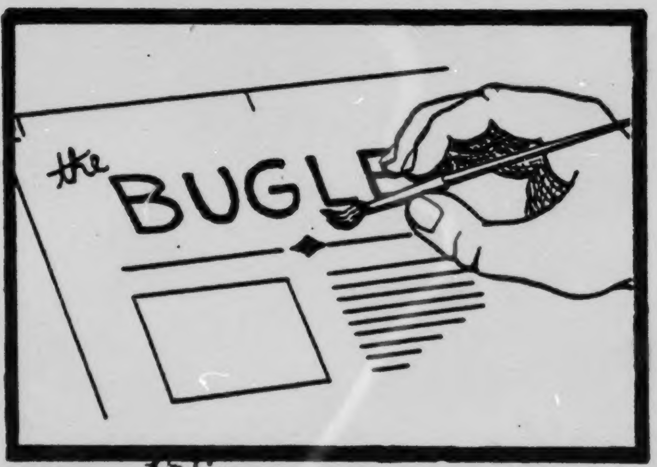
6. SCRIBE-IN THE IMAGE CENTER REFERENCE MARKS, IF THEY ARE NOT ALREADY ON THE NEGATIVES.



7. STRIP THE NEGATIVE PAGES ON THE MASKING FLAT. CHECK FOR SQUARENESS.



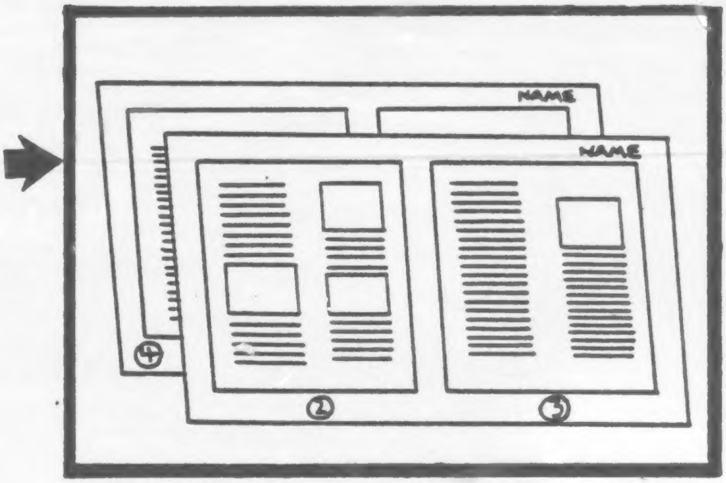
8. CUT OUT YOUR WINDOWS AND OPAQUE THE NEGATIVES.



JOB STEPS

9. IF YOU NEED TO STRIP THE HALFTONES, MAKE A DOUBLE BURN FLAT, DO IT NOW.

10. WITH A BOLD DARK MARKER, WRITE THE FOLLOWING:



A. PAGE NUMBERS (UNDER EACH NEGATIVE),

B. JOB NUMBER AND IDENTITY OF EACH FLAT (NEAR THE GRIPPER EDGE),

C. YOUR NAME PRINTED IN PENCIL (IN THE UPPER RIGHT HAND CORNER),

D. DATE FOR FUTURE REFERENCES.

11. NOW MAKE A SET OF PROOFS. TRIM THE PROOFS TO THE P.S.S. SIZE, CHECK QUALITY AND ACCURACY YOURSELF FIRST, THEN HAVE YOUR INSTRUCTOR CHECK THE PROOFS BEFORE SENDING THEM TO THE CUSTOMER.

12. WHEN FINISHED, CLEAN YOUR WORKING AREA. THEN, CHECK WITH YOUR INSTRUCTOR TO FIND OUT WHAT MOD PROJECT TO DO NEXT.

graphics

unit: STRIPPING

capital area career center

module: 1401 11 016
1401 11 016 3 **date:** 7/77 **level:** IV

skill title: COMPLETE STRIPPING PROJECT: BROCHURE

developed & written by: GLEN PETTIT AND DWIGHT HORNER

visuals by:

PERFORMANCE OBJECTIVE

YOU ARE GOING TO LEARN:

HOW TO ACCURATELY STRIP-UP ALL NECESSARY FLATS FOR THIS "LIVE" OR "PROJECT" BROCHURE AND HOW TO DO ANY NECESSARY SPECIAL STRIPPING OR COLOR REGISTER WORK.

IN ORDER TO DO THIS YOU WILL NEED:

A LIGHT TABLE
LINE GAUGE AND TRIANGLE
X-ACTO KNIFE AND RAZOR BLADE
PUNCH
T-SQUARE
SCISSORS
OPAQUE BRUSH
SCRIBER
BALL POINT PEN
GLASS CLEANER
OPAQUE
TAPE (RED & MASKING)
REGISTER PINS
BROCHURE NEGATIVES
MASKING SHEETS
SILVERPRINT PAPER
JOB ENVELOPE
BROCHURE DUMMY

WE WILL KNOW YOU CAN DO IT WHEN:

1. THE COMPLETED TWO-SIDED BROCHURE NEGATIVES ARE EXACTLY POSITIONED AND REGISTERED FOR THE P.S.S.

2. ALL FOLD AND TRIM MARKS ARE POSITIONED ON THE FLAT ACCORDING TO JOB SPECIFICATIONS AND STANDARD TRADE PRACTICE.

3. REGISTRATION IS WITHIN 1 MM AND ALL FLATS ARE PROPERLY IDENTIIFED.

A TAPE OF THIS MODULE IS AVAILABLE.

INFORMATION

NORMALLY, THIS IS PART OF AN ADVANCED PRODUCTION JOB. IT MAY BE A LIVE JOB WHICH IS IN PRODUCTION OR IT MAY BE PART OF A SERIES OF MODS:

(1)	LAYOUT	MOD #1401 07 064
(2)	PASTE-UP	MOD #1401 09 029
(3)	STRIPPING	MOD #1401 11 016
(4)	PRESSWORK	UNIT 13

IDEALLY, YOU WOULD BE INVOLVED WITH THE TOTAL JOB, DOING ONE OR MORE MODS IN THIS SERIES BY YOURSELF. EACH JOB IS DIFFERENT. YOU SHOULD BE ABLE TO UNDERSTAND ALL INSTRUCTIONS FROM WHAT IS WRITTEN ON THE JOB ENVELOPE AND FROM THE DUMMY.

WORD GUIDE

BROCHURE - PAMPHLET; SMALL FOLDER WITH WRITTEN (AND SOMETIMES PHOTOGRAPHED) INFORMATION.

JOB STEPS

1. TAKE ALL EQUIPMENT AND MATERIALS TO YOUR WORK AREA.
2. CHOOSE AND CLEAN A LIGHT TABLE.
3. GET THE NEGATIVES, JOB ENVELOPE AND DUMMY FOR THIS ENTIRE JOB.
4. LAYOUT YOUR MASKING SHEETS AND DRAW ALL NECESSARY REFERENCE LINES. THEN DOUBLE-CHECK YOUR WORK.
5. TAPE THE REFERENCED NEGATIVES INTO POSITION, INCLUDING THE TRIM AND FOLDMARK NEGATIVES.
6. DO ALL STRIP-INS, SUCH AS ADDING HALFTONES OR OTHER NECESSARY SPECIAL WORK.
7. CUT OUT WINDOWS AND OPAQUE NEGATIVES.
8. MAKE A PROOF. FOLD THE PROOF INTO A DUMMY AND THEN HAVE YOUR INSTRUCTOR EVALUATE AND CRITICIZE YOUR WORK.
9. MAKE THE PLATES AND PREPARE (WRAP AND IDENTIFY) ALL MATERIALS FOR THE PRESS OPERATOR AND FOR STORAGE.
10. IF YOU DO NOT DO THE PRESSWORK FOR THIS BROCHURE, WORK WITH THE PRESS OPERATOR ON QUALITY CONTROL.
11. BE SURE YOUR AREA IS CLEANED UP FOR USE BY THE NEXT PERSON.
12. YOU WILL DELIVER AND GO OVER THE COMPLETED JOB WITH THE CUSTOMER FOR THEIR APPROVAL AND COMMENTS.

graphics

unit: STRIPPING

capital area career center

module: 1401 11 017
1401 11 017 3 date: 7/77 level: IV

skill title: COMPLEX STRIPPING PROJECT

developed & written by: GLEN PETTIT AND DWIGHT HORNER

visuals by:

PERFORMANCE OBJECTIVE

YOU ARE GOING TO LEARN:

HOW TO ACCURATELY STRIP-UP ALL FLATS AND DO ALL SPECIAL STRIPPING NECESSARY FOR THIS JOB OR PROJECT.

AND IN ORDER TO DO THIS YOU WILL NEED:

- A LIGHT TABLE
- LINE GAUGE AND TRIANGLE
- X-ACTO KNIFE & RAZOR BLADE
- PUNCH
- T-SQUARE
- SCISSORS
- OPAQUE BRUSH
- SCRIBER
- BALL POINT PEN
- GLASS CLEANER
- OPAQUE
- TAPE (RED & MASKING)
- REGISTER PINS
- JOB NEGATIVES
- MASKING SHEETS
- SILVERPRINT PAPER
- JOB ENVELOPE

WE WILL KNOW YOU CAN DO IT WHEN:

1. THE COMPLETED JOB OR PROJECT NEGATIVES ARE EXACTLY POSITIONED AND REGISTERED FOR THE P.S.S.
2. ALL FOLD AND TRIM MARKS ARE POSITIONED ON THE FLAT, ACCORDING TO JOB SPECIFICATIONS.
3. THE WINDOWS ON THE FLATS ARE ACCURATELY CUT AND NEGATIVES OPAQUED TO PRODUCE THE HIGHEST QUALITY OFFSET PLATE POSSIBLE.

A TAPE OF THIS MODULE IS AVAILABLE.

WORD GUIDE

ADAPT - CHANGE TO SUIT DIFFERENT SITUATION.

COMPLEX - COMPLICATED, DIFFICULT.

INFORMATION

HAVING COMPLETED THE FIRST SIXTEEN MODS IN THIS STRIPPING SERIES, YOU SHOULD BE ABLE TO PERFORM ANY STRIPPING JOB NORMALLY RUN ON OUR OFFSETS, AND TO QUICKLY ADAPT YOUR KNOWLEDGE TO SPECIALIZED TECHNIQUES IN STRIPPING FOR LARGER OFFSET PRESSES INCLUDING REGISTER, DOUBLE BURNS, SCREEN TINTS AND TRIM MARKS.

NORMALLY, THIS IS PART OF AN ADVANCED PRODUCTION JOB AND YOU WOULD WAIT ON THIS MOD UNTIL AN IDEAL, COMPLEX STRIPPING JOB CAME IN FOR PRODUCTION.

IT MAY TAKE SEVERAL MONTHS BEFORE THE IDEAL COMPLEX JOB COMES IN. CHECK WITH YOUR INSTRUCTOR ONCE A WEEK AS A REMINDER. YOU MAY BE GIVEN A PRACTICE JOB TO MEET THE REQUIREMENTS FOR THIS MOD.

WORD GUIDE

PROPER - RIGHT
CRITIQUE - EXAMINE

JOB STEPS

1. TAKE ALL EQUIPMENT AND MATERIALS TO YOUR WORK AREA.
2. CHOOSE AND CLEAN A LIGHT TABLE.
3. GET THE NEGATIVES, JOB ENVELOPE, AND DUMMY FOR THIS ENTIRE JOB.
4. WHEN YOU HAVE UNDERSTOOD ALL THE JOB SPECIFICATIONS AND KNOW WHAT TO DO, DO THIS COMPLEX STRIPPING JOB.
5. MAKE A PROOF AND THEN A TRIMMED DUMMY.
6. AFTER GETTING THE PROOF APPROVED BY THE CUSTOMER AND YOUR INSTRUCTOR, MAKE THE PROPER PLATES.
7. PREPARE ALL MATERIALS FOR THE PRESS OPERATOR AND FOR STORAGE.
8. CHECK ON THIS JOB AS IT IS BEING RUN ON THE PRESS AND ASSIST IN QUALITY CONTROL. AFTER THE JOB IS PRINTED, TRIMMED, AND DELIVERED, HAVE YOUR INSTRUCTOR EVALUATE AND CRITIQUE YOUR WORK AND FLATS.

graphics

unit: PLATEMAKING AND PROOFING

capital area career center

module: 1401 12 001
1401 12 001 3 **date:** DECEMBER 1977 **level:**

skill title: BASIC TOOLS, EQUIPMENT AND PLATEMAKING METHODS

developed & written by: GLEN PETTIT

visuals by: BRUCE BENNETT 366

PERFORMANCE OBJECTIVE

YOU ARE GOING TO LEARN:

HOW TO IDENTIFY, USE AND CARE FOR ALL THE PLATEMAKING ITEMS.

IN ORDER TO DO THIS YOU WILL NEED:

NUARC PLATEMAKER

NUARC PLATE SINK

NUARC FINISHING TABLE

PLATE STORAGE CABINET

3M CHEMICALS:
- R PROCESS GUM
- R DEVELOPER
- TUSCHE
- DELETION FLUID
- CLEANER CONDITIONER
- SUBTRACTIVE PLATE GUM
- K DEVELOPER
- COLOR KEY DEVELOPER

WE WILL KNOW YOU CAN DO IT WHEN:

1. YOU CAN USE AND CARE FOR PLATEMAKING EQUIPMENT AND MATERIALS SO THAT THEY ARE IN GOOD, USABLE, CLEAN AND SAFE WORKING CONDITION AT ALL TIMES.
2. YOU HAVE A BASIC UNDERSTANDING OF HOW TO USE ALL THE MATERIALS FOR PLATEMAKING AND ARE FAMILIAR WITH 100% OF ALL THE ITEMS.

A TAPE OF THIS MODULE IS AVAILABLE.

WORD GUIDE

NON-REFLECTIVE - DOESN'T GIVE OFF LIGHT

INFORMATION

AFTER YOU HAVE STRIPPED-UP AND PREPARED THE FLAT, YOU MUST MAKE AN OFFSET PLATE. MOST SMALL OFFSET PLATES ARE PRE-SENSITIZED (PHOTO EMULSION ALREADY ON THE PLATE) METAL AND ARE EXPOSED TO A STRONG LIGHT SOURCE IN A CONTACT VACUUM FRAME.

HERE IS A LIST OF THE TOOLS, EQUIPMENT AND BASIC MATERIALS USED IN THE PLATEROOM. TRY TO FIND EACH OF THESE AS YOU READ ABOUT IT:

ROOM LAYOUT

IN THE PLATEROOM, SINKS AND EXPOSURE UNITS MUST BE HELD DOWN WELL AND SHOULD BE CLOSE TO POWER OR PIPES. WORK TABLES SHOULD BE EASY TO GET TO AND USE FROM ALL SIDES. SINKS AND TABLES SHOULD BE HARD, FLAT, WELL-DRAINED AND CLEAN.

IT IS GOOD TO HAVE "SWITCH-OVER" YELLOW AND WHITE LIGHTING IN THE PLATEROOM. PLATES SHOULD BE HANDLED UNDER YELLOW SAFELIGHTS UNTIL THEY ARE DEVELOPED. YELLOW TUBES, YELLOW BULBS OR DIM WHITE BULB WITH A MASKING SHEET FOR A FILTER SHOULD BE USED.

ROOM TEMPERATURE (70 - 72° F.) AND HUMIDITY (50 - 55%) SHOULD BE EVEN AND STEADY ALL THE TIME (WEEKENDS TOO). LIVE VOLTAGE SHOULD BE STEADY. IT IS BEST TO HAVE NON-REFLECTIVE (BLACK) PAINT ON THE WALLS.

PLATE STORAGE

STORE UNEXPOSED PLATES IN A COOL, DRY PLACE (SAME AS ANY OTHER PHOTOGRAPHIC MATERIAL). AVOID DAMP BASEMENTS, SINK COUNTERS AND AREAS NEAR RADIATORS. ALL PLATE PACKAGES SHOW AN EXPIRATION DATE. STORE SO THE 'OLDEST' ARE USED FIRST. PLATES ARE PACKED TO PROTECT THEM FROM LIGHT, MOISTURE AND DIRT. BLACK PLASTIC OR FOIL ARE USUALLY USED WITH PAPER. THE PACKAGE SHOULD BE OPENED WITH CARE AND CLOSED TIGHT AFTER EACH PLATE.

KEEP THE PRE-SENSITIZED EMULSION UP WHEN THE PACKAGE IS OPENED. ALWAYS OPEN THE PACKAGE AND LIFT OUT THE PLATE. DO NOT PULL OR SLIDE THE PLATE (THIS SCRATCHES YOURS AND THE NEXT PLATE TOO). INTERLOCK THE FLAPS WHEN CLOSING. TAPE ANY TEARS IN THE PACKAGE.

IT IS BEST TO STORE PRESS-READY (FINISHED) PLATES IN A HANGING POSITION, FACE TO FACE AND BACK TO BACK. THIS REDUCES SURFACE CONTAMINATION AND METAL OXIDATION. IF STORING PRESS-READY PLATES FLAT, ALWAYS SLIPSHEET (SHEET OF PAPER BETWEEN EVERY PLATE) AND DELIVER IN A FOLDER.

INFORMATION

PLATE HANDLING

ORDINARY CARE IS ALL THAT IS REQUIRED IN HANDLING PLATES:

1. HANDLE PLATES UNDER YELLOW LIGHTS UNTIL THEY ARE PROCESSED.
2. LIFT PLATES OUT OF THEIR PACKAGES.
3. LIFT AND CARRY PLATES BY ADJACENT CORNERS (THIS PREVENTS ACCIDENTAL KINKING).
4. AVOID FINGERPRINTING THE PRESENSITIZED PLATE SURFACE.

PLATE CHEMICALS

IN USING CHEMICALS, BE SURE YOU HAVE THE RIGHT CHEMICAL FOR THE RIGHT PLATE. AVOID USING ONE BRAND ON ANOTHER BRAND OF PLATE.

GENERAL RULES FOR HANDLING AND STORING CHEMICALS:

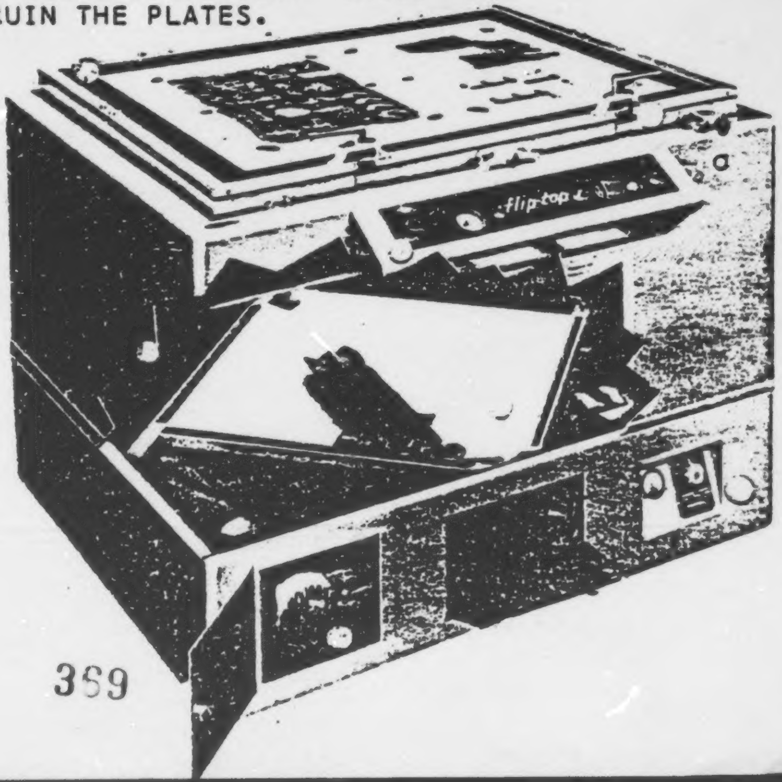
1. SHAKE BOTTLES BEFORE USE.
2. CLOSE TIGHTLY AFTER EACH USE. CHEMICALS LEFT EXPOSED TO AIR EVAPORATE AND THICKEN.
3. FOLLOW RECOMMENDED APPLICATION INSTRUCTIONS.
4. USE IN A WELL-VENTILATED AREA.
5. AVOID EXTENDED EXPOSURE TO HEAT OR FREEZING DURING STORAGE.
6. AVOID CONTAMINATION, KEEP BOTTLES CLEAN (ESPECIALLY THE NECK OF THE "R" DEVELOPER, LACQUER. DRIED RED LACQUER CAN CHIP AND RUIN THE PLATES.

PLATEMAKING EQUIPMENT

EXPOSURE UNIT: HERE AT THE CAREER CENTER WE USE A NUARC FLIP-TOP PLATEMAKER WITH A SINGLE PULSED-XENON LIGHT SOURCE.

BASICALLY ALL A PLATEMAKER CONSISTS OF IS A LIGHT SOURCE, A FRAME TO HOLD THE FLAT AND PLATE IN AND A VACUUM TO KEEP THE FLAT AND PLATE IN TIGHT CONTACT.

THE NUARC PLATEMAKER WE USE COSTS ABOUT $1,900. A SMALLER SIZE UNIT WILL COST $800.



INFORMATION

BASICALLY THERE ARE THREE LIGHT SOURCES WHICH PRODUCE THE ULTRAVIOLET LIGHT (ACTINIC RAYS);

1. CARBON ARC - INEXPENSIVE BUT MUST BE CHANGED EVERY 20 MINUTES OF USE AND PRODUCES FUMES & SMOKE WHICH MUST BE VENTED OUT.
2. PULSED XENON - CLEAN 75-100 HOUR TUBE LIFE, REACHES PEAK INTENSITY INSTANTLY.
3. MERCURY VAPOR - (LIKE COMMON SUN LAMP) HI-INTENSITY 50-HOUR TUBES GIVE A VERY INTENSE SHORT EXPOSURE.

PLATE SINK

THE NUARC PLATE SINK HAS A SLOPED DRAINBOARD WITH RUNNING WATER AT THE TOP. WE HAVE PUT IN A PIECE OF PLATE GLASS FOR A HARDER FLAT SURFACE. THE TOPS HAVE HOT AND COLD WATER (COLD IS ALWAYS ON THE RIGHT) BUT BEST IS ABOUT 68° F. (20° C). THE CENTER VALVE IS FOR THE UPPER FAUCET FOR MIXING CHEMICALS OR WASHING. MANY PLATEROOMS USE A RUBBER HOSE FOR QUICK WASHING. CHEMICALS ARE STORED ON THE BACK BOARD AND UNDER THE SINK. CAUTION: BECAUSE OF PIPE LENGTH, IT MAY TAKE A MINUTE OR TWO FOR WATER TEMPERATURE TO SETTLE, SO LET THE WATER RUN BEFORE USING.

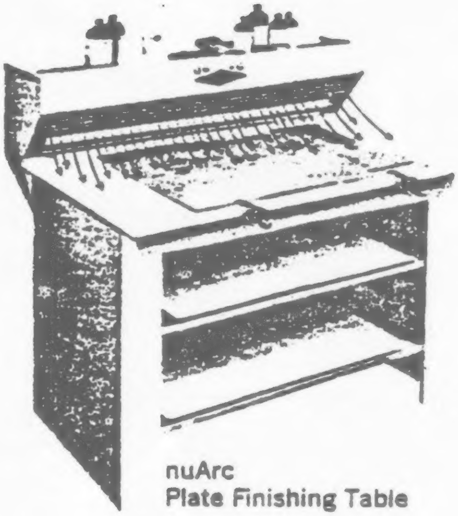
nuArc
Plate Developing Sink

INFORMATION

FINISHING TABLE

THIS (RUB-UP) TABLE HAS A FORCED AIR FAN AND A HEATER FOR FASTER DRYING OF PLATES. THE PROCESS GUM IS "BURNISHED" HERE TO A SMOOTH LAYER. WHEN THE DRAFT PAPER BECOMES DIRTY, A NEW CLEAN SECTION MAY BE PULLED OUT AND USED.

THE RUBBER-TIPPED CLAMPS WILL HOLD THE PLATES WHILE BURNISHING. THE KRAFT PAPER MAY BE CUT WITH SCISSORS. BE SURE YOU HAVE A CLEAN, FLAT SURFACE TO WORK ON.



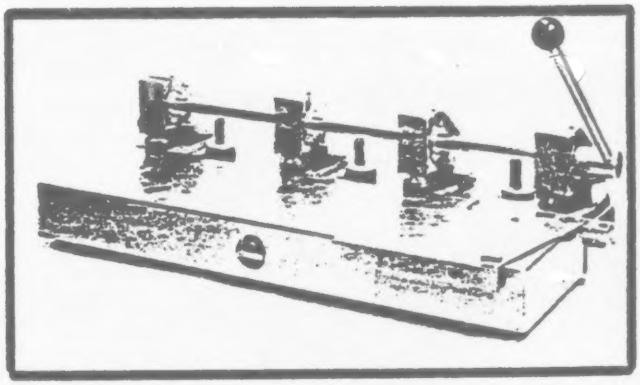
nuArc
Plate Finishing Table

PLATE STORAGE CABINET

ALL PLATES ARE KEPT IN THIS STORAGE CABINET. PULL THE DRAWERS OPEN AS FAR AS THEY COME, LIFT OPEN THE SAFETY FLAP, THEN OPEN THE PLATE PACKAGE TO LIFT OUT YOUR PLATE. CLOSE THE PACKAGE AND DRAWER BEFORE EXPOSING YOUR PLATE. CHEMICAL STORAGE IS UNDER THE CABINET. WE KEEP COLOR-KEY AND SILVERPRINT PAPER IN THE TOP DRAWER.

INFORMATION

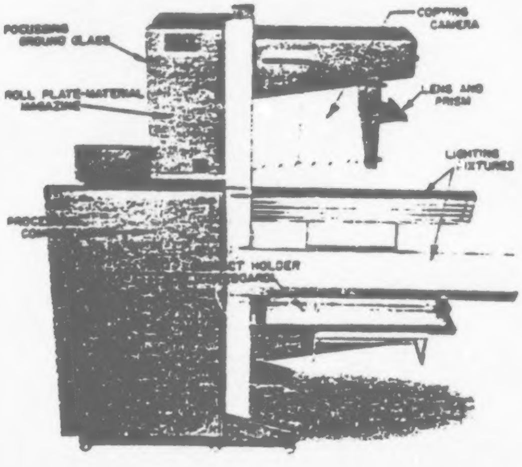
MASTER PUNCH



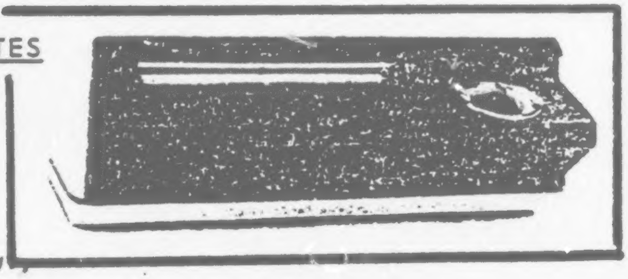
LARGER PLATEROOMS WILL HAVE A REGISTER PUNCH FOR EXACT PLATE POSITIONING ON THE PRESS, AND DOUBLE BURNS. WE USE A STANDARD 1/4" HAND PUNCH FOR OUR REGISTER WORK. THE REGISTER PINS LOOK SIMPLE BUT COST $4.50/PAIR. A GOOD PUNCH COSTS $300 TO $400.

PHOTO-DIRECT PLATES

PHOTO-DIRECT PRE-SENSITIZED PLATES HAVE A FASTER COATING (5 SECOND EXPOSURE) AND ARE MADE IN A SEMI-AUTOMATIC CAMERA AS SHOWN. PLATES COME IN A ROLL AND ARE EXPOSED RIGHT FROM THE ORIGINAL COPY (NO NEGATIVE). THE PLATE IS PUT THROUGH THE UNIT FOR ABOUT 1 1/2 MINUTES. ALLOW ABOUT 1/4 MINUTES BETWEEN PLATES.



THERMOGRAPHIC (INFRARED) TRANSFER PLATES



A CHEAPER PLATEMAKER, THE THERMO-FAX, MAKES A PLATE RIGHT FROM THE ORIGINAL BY INFRARED RADIATION OR THE SPECIAL PLATE MATERIAL. QUALITY IS POOR BUT IT IS FAST AND CHEAP.

WORD GUIDE

FUSED - MELTED AND ATTACHED

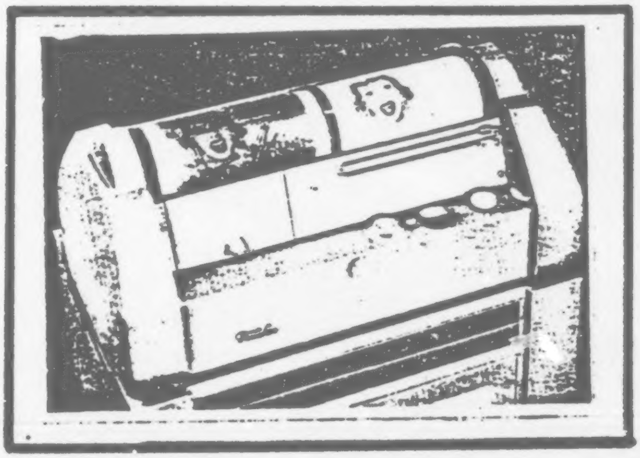
INFORMATION

ELECTRONIC SCANNING

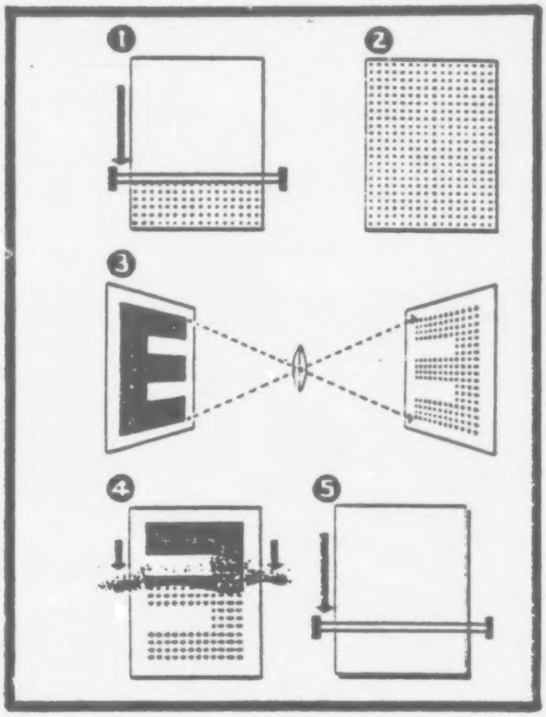
A GOOD EXAMPLE IS OUR RONOTRONIC STENCIL CUTTER: THE ORIGINAL IS PLACED ON THE LEFT AND THE PLATE ON THE RIGHT. AS THE DRUM TURNS AROUND, AN ELECTRIC EYE GOES OVER THE ORIGINAL AND SENDS AN IMPULSE TO A BURNER NEEDLE WHICH MELTS TINY SPOTS ON THE PLATE.

XEROGRAPHY (ELECTROSTATIC)

("ZEE-ROG-RA-FEE")(MEANS DRY WRITING) XEROGRAPHY IS A COMMON PAPER, OFFSET PLATEMAKING PROCESS WHICH WORKS LIKE OUR BRUNING 2000 COPIER. THE PROCESS IS SIMPLE (SAME AS 10¢ COPY MACHINES) AND TAKES ONLY SECONDS:



1) SURFACE OF SELENIUM - COATED PLATE IS ELECTRICALLY CHARGED UNDER WIRES.
2) PLUS-MARKS MEAN POSITIVELY CHARGED PLATE.
3) ORIGINAL DOCUMENT IS PROJECTED THROUGH CAMERA LENS. PLUS-MARKS HERE MEAN LATENT IMAGE RETAINING POSITIVE CHARGE. CHARGE IS DRAINED AWAY IN AREAS THAT ARE EXPOSED.
4) POWDERED (WITH NEGATIVE CHARGE) GRAPHITE IS POURED OVER THE PLATE AND STICKS TO POSITIVE IMAGE.
5) SHEET OF PAPER (OR OFFSET MASTER) IS PLACED OVER PLATE AND PAPER IS GIVEN STRONGER POSITIVE CHARGE.



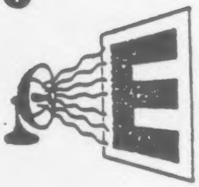
INFORMATION

6) POSITIVELY-CHARGED PAPER ATTRACTS ALL IMAGE POWDER FROM PLATE.

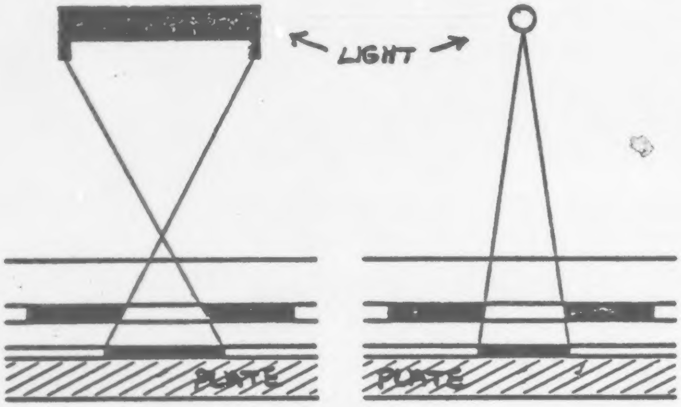
7) POWDERED GRAPHITE IS FUSED TO THE PAPER BY HEAT (INFRARED).

⑥

⑦



IN PLATEMAKING, A POINT LIGHT SOURCE WORKS WELL TO REPRODUCE AND EXPOSE THE SAME SIZE IMAGE. IN THE DRAWING, NOTICE THE SIZE OF THE FINAL IMAGE. IT IS IDEAL TO HAVE THE POINT LIGHT SOURCE FURTHER AWAY (2 - 3 METERS) BUT YOU NEED MORE SPACE AND A LONGER EXPOSURE. WHEN YOU DOUBLE THE DISTANCE OF THE LIGHT, YOU GET ONE FOURTH THE LIGHT AND NEED FOUR TIMES THE EXPOSURE. ON A PLATEMAKER, ALWAYS KEEP THE PLATE NEAR THE CENTER OF THE FRAME.



COTTON PADS: SMALL 4"X4" DOUBLE COTTON PADS, USED TO APPLY OR REMOVE ANY CHEMICAL (EXCEPT BLANKET WASH). THEY COME IN PACKAGES OF 100 OR ROLLS AND COST 2¢ EACH. PADS MAY BE USED AGAIN MANY TIMES BY REFOLDING, USUALLY IN QUARTERS (2" X 2").

DEVELOPING BLOCK: A HARD FLAT RUBBER BLOCK, 2" X 4" FACE, USED WITH A COTTON PAD FOR COLOR-KEY DEVELOPING.

DEVELOPING PAD: A LARGE, STYROFOAM PAD

THERE ARE MANY BRANDS OR COMPANIES MAKING OFFSET PRINTING PLATES: KODAK, 3M, DUPONT, POLYCHROME, WESTERN. ALL PLATES ARE ALIKE AND EACH COMPANY OFFERS A LINE OF 6 TO 10 PLATES FOR DIFFERENT RUNS.

INFORMATION

WE HAVE DECIDED TO USE 3M PLATES AND CHEMICALS. THERE ARE CHEAPER PLATES AND BETTER QUALITY PLATES. IN CENTRAL MICHIGAN, 3M ARE THE MOST COMMON. PICTURED IS A LIST OF THE PLATES 3M MAKES, "MILEAGE" AND DETAILS ON EACH (WE USE E, K AND R PLATES HERE).

3M Plate	Construction	Printing Surfaces	Approx. "Mileage"	Type	Processing
★ E	Aluminum foil on paper base	One	5,000	Negative-acting	Additive
★ K	Solid aluminum	One	50,000	Negative-acting	Subtractive
L	Aluminum foil on paper base	Two	5,000	Negative-acting	Additive
M	Solid aluminum	Two	3,000	Negative-acting	Additive/ Subtractive
★ R	Solid aluminum	Two	25,000	Negative-acting	Additive
S	Solid aluminum	One	100,000	Negative-acting	Subtractive
S-P	Solid aluminum	One	100,000	Positive-acting	Subtractive
T	Solid aluminum	One	200,000	Negative-acting	Subtractive

STUDY THE FOLLOWING WORDS:

'R' PROCESS GUM - USED TO REMOVE UNEXPOSED EMULSION FROM ADDITIVE PLATES AND THEN TO PROTECT FINISHED PLATES FROM DUST, DIRT AND OXIDATION.

'R' DEVELOPER - A RED LACQUER PLACED ON THE IMAGE TO GIVE PLATES LONG LIFE (MILEAGE ON THE PRESS).

'R' SCRATCH REMOVER - WILL REDUCE SCRATCHES IN THE NON-IMAGE AREAS OF A PLATE, ALSO USED FOR CLEANING PLATES.

SUBTRACTIVE GUM - TO PROTECT SUBTRACTIVE PLATES AFTER PROCESSING.

'K' DEVELOPER - A CLEAR LIQUID THAT REMOVES THE RED LACQUER FROM SUBTRACTIVE 'K' PLATES.

STICKEE - A GLUE USED TO HOLD 'E' PLATES ON THE PLATE CYLINDER OF A PRESS, BLANKET WASH REMOVES.

INFORMATION

PLATE TUSCHE - WILL ALLOW AN AREA TO ACCEPT INK ON THE PLATE.

DELETION FLUID - WILL REMOVE UNWANTED IMAGE FROM A PLATE.

COLOR-KEY DEVELOPER - USED TO DEVELOP NEGATIVE COLOR KEY BY REMOVING UNEXPOSED AREAS.

CLEANER-CONDITIONER - CLEANS DIRTY PLATES AND DRIED GUM.

SPEED DENSITIZER - FAST PLATE DEVELOPER FOR SHORT RUNS.

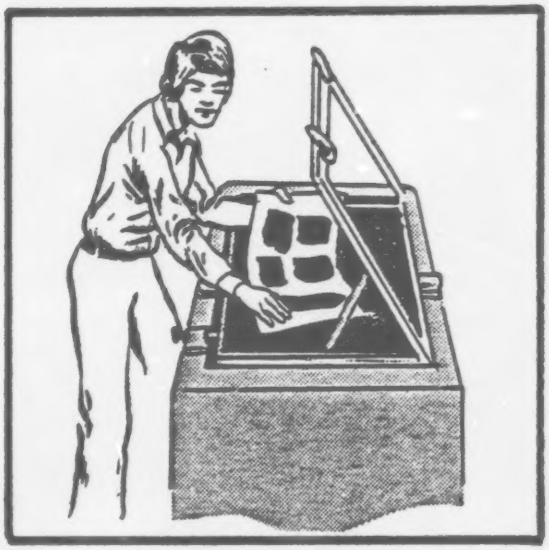
PLATE ETCH - FOR PAPER DIRECT IMAGE MASTERS, REMOVES WAX COVERING BEFORE RUNNING.

JOB STEPS

1. READ ALL THE INFORMATION IN THIS MODULE.

2. LOOK OVER ALL OF THE EQUIPMENT, TOOLS AND MATERIALS LISTED.

3. LOAD THE FLAT AND PLATE. LIFT THE GLASS FRAME AND POSITION THE FLAT AND PLATE TOGETHER IN THE CENTER OF THE BLANKET.



4. CHECK THAT THERE IS NO DUST, DIRT, OR OLD OPAQUE ON THE GLASS OR NEGATIVE.

NOTE: REMOVE FLAT AND PLATE WHILE CLEANING (SEE STEP 15).

5. CLOSE THE FRAME SO THAT FLAT AND PLATE FACE LIGHT SOURCE.

6. TURN ON THE MASTER SWITCH.

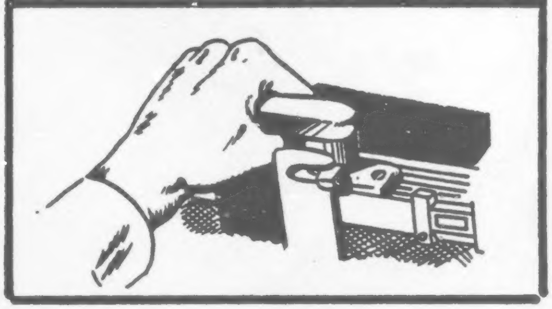
JOB STEPS

7. TURN ON THE VACUUM PUMP SWITCH.

NOTE: WAIT UNTIL VACUUM IS PAST 22.

8. BE SURE THE FLAT AND PLATE FACE THE LIGHT SOURCE. THEN LOCK THE FRAME.

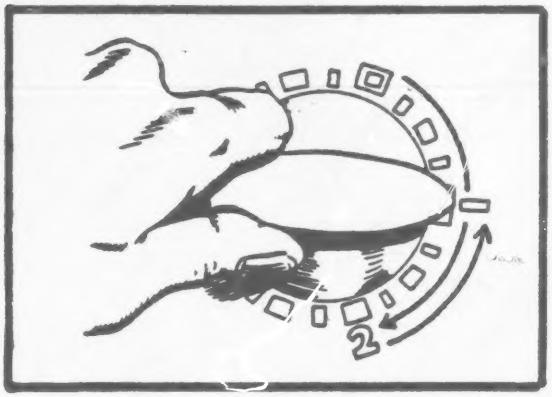
NOTE: BE SURE LATCH IS SECURE.



9. EXPOSE:

   A. SET THE TIMER FOR ONE MINUTE (TURN SETTING PAST 2 MINUTES, THEN BACK TO ONE MINUTE.

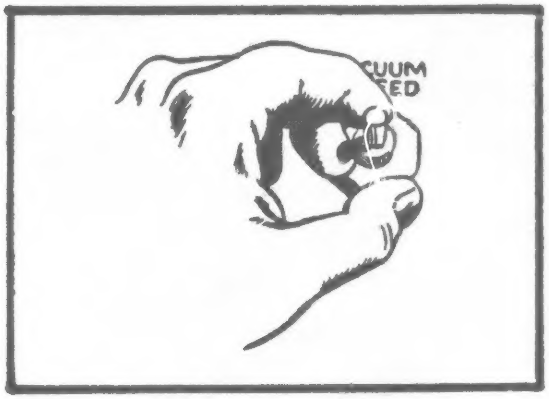
   B. TURN LAMP SWITCH TO "ON-TIMER" TO AUTOMATICALLY START AND STOP EXPOSURE. DO NOT LOOK DIRECTLY INTO THE UNIT.



NOTE: OTHER SETTINGS ARE: OFF-CENTER POSITION, MANUAL-DOWN. IN MANUAL, LIGHT STAYS ON UNTIL YOU TURN IT OFF.

10. WHEN EXPOSED, RELEASE FRAME LATCH AND FLIP THE FRAME BACK TO THE LOADING POSITION.

JOB STEPS



11. TURN VACUUM PUMP OFF BY OPENING RELEASE AND TURN 1/4 COUNTER-CLOCKWISE TO "BLEED" OFF PRESSURE.

12. OPEN FRAME AND REMOVE FLAT AND PLATE.

13. CLOSE FRAME AND FLIP IT AGAIN SO GLASS IS DOWN.

14. TURN OFF MASTER SWITCH.

15. CLEAN GLASS. USE PAPER TOWELS AND GLASS CLEANER.

NOTE: COVER THE BLANKET WITH RAG OR SCRAP PAPER - MOISTURE WILL RUIN DYE ON THE FLAT.

graphics

unit: PLATEMAKING AND PROOFING

capital area career center

module: 1401 12 002
1401 12 002 3 **date:** 12/77 **level:**

skill title: RELIEF PRINTING PLATES

developed & written by: GLEN PETTIT

visuals by:

380

PERFORMANCE OBJECTIVE

YOU ARE GOING TO LEARN:

1. HOW TO RECOGNIZE AND IDENTIFY THE COMMON LETTERPRESS RELIEF PRINTING PLATES.
2. HOW TO PRODUCE A HAND CARVED LINOLEUM BLOCK.

AND IN ORDER TO DO THIS YOU WILL NEED:

A SLIDE/TAPE PRESENTATION ON RELIEF PRINTING PLATES AND SAMPLES OF COMMON RELIEF PRINTING PLATES USED IN THE LETTERPRESS INDUSTRY TODAY.

SLIDE TAPE NUMBER 1401 12 002

CARAMATE PROJECTOR

BOX OF RELIEF PRINTING AND PLATE SAMPLES

WE WILL KNOW YOU CAN DO IT WHEN:

YOU EASILY RECOGNIZE AND IDENTIFY THE COMMON LETTERPRESS RELIEF PRINTING PLATES AND UNDERSTAND HOW AND FOR WHAT THEY ARE BEST USED.

A TAPE OF THIS MODULE IS AVAILABLE.

INFORMATION

WATCH THE SLIDE/TAPE PRESENTATION ON LETTERPRESS RELIEF PLATES. TAKE A BOX OF RELIEF PLATE SAMPLES TO EXAMINE WHILE YOU ARE WATCHING THE SLIDE/TAPE. ALL INFORMATION YOU WILL NEED IS ON THE SLIDE/TAPE.

THE LAST PART OF THIS SLIDE/TAPE IS ON HAND-CUT LINOLEUM BLOCKS AND IS OPTIONAL. IF YOU CAN UTILIZE A SMALL LINOLEUM BLOCK WITH ONE OF YOUR PRESS MODS, YOU MAY CARVE ONE AT HOME WITH OUR TOOLS.

STUDY THE FOLLOWING LIST OF TECHNICAL WORDS. YOU WILL NEED TO KNOW THE WORD MEANINGS FOR THE SLIDE/TAPE:

DUPLICATE PLATES - MORE THAN ONE OF THE EXACT SAME PLATE CAN BE MADE.

ENGRAVING - A RELIEF PLATE MADE BY CHEMICALLY ETCHING AWAY THE NON-IMAGE AREAS.

HALFTONES - A PHOTOGRAPH CANNOT BE PRINTED, IT MUST BE BROKEN UP INTO SMALL DOTS; THERE MAY BE 80-100-150 DOTS PER INCH OR 15-20,000 DOTS PER SQUARE INCH. THE SMALLER DOTS APPEAR AS ALMOST WHITE, A 90% DOT WOULD BE BLACK.

ELECTROTYPE - A TEMPORARY MOLD IS MADE FROM THE ORIGINAL AND A COPPER SHELL IS PLATED TO THIS MOLD BY ELECTROLYSIS, THE MOLD REMOVED AND THE SHELL IS BACKED.

STEROTYPE - LIKE THE STATE JOURNAL USES. A MOLD IS MADE FROM THE FORM AND HOT LEAD POURED INTO IT.

PLASTIC OR RUBBER PLATES - A MOLD IS MADE AND THE PLASTIC OR RUBBER IS CAST FROM THIS, THEN MOUNTED ON WOOD.

SCAN-O-GRAVER - A PLASTIC IS ETCHED BY HEAD ON A MACHINE (SIMILAR TO OUR ROVOTRONIC STENCIL CUTTER) THAT REMOVES THE NON-IMAGE AREAS SLIGHTLY.

JOB STEPS

1. GET THE RELIEF PLATE SAMPLE BOX.
2. GET THE SLIDE/TAPE AND A PROJECTOR, SET UP.
3. LISTEN AND WATCH THE SLIDE/TAPE. LOOK AT THE ITEMS IN THE RELIEF PLATE SAMPLE BOX AS THE SLIDE PRESENTATION DESCRIBES THEM AND THEIR FUNCTION.

graphics

unit: PLATEMAKING AND PROOFING

capital area career center

1401 12 003
module: 1401 12 003 3 **date:** JANUARY 1978 **level:**

skill title: EXPOSING AND PROCESSING ADDITIVE OFFSET PLATES

developed & written by: GLEN PETTIT

visuals by: DAVE BROWN

PERFORMANCE OBJECTIVE

YOU ARE GOING TO LEARN:

HOW TO PROPERLY POSITION THE FLAT ON THE PLATE, EXPOSE, DEVELOP, PROCESS AND EVALUATE AN ADDITIVE OFFSET PLATE (E OR R).

IN ORDER TO DO THIS YOU WILL NEED:

A COMPLETED FLAT AND A REQUEST TO MAKE AN ADDITIVE OFFSET PLATE FOR A 5,000 PRESS RUN
PLATE SINK
NUARC PLATEMAKER
FINISHING TABLE
3M "E" OR "R" PLATE
FLAT (FROM MOD 1401 11 003)
SPONGES
'R' PROCESS GUM
'R' DEVELOPER
COTTON PAD
PLATE FOLDER

WE WILL KNOW YOU CAN DO IT WHEN:

1. YOU ACCURATELY AND SQUARELY PLACE THE IMAGE ON THE PLATE.
2. YOU DEVELOP THE PLATE TO A SOLID RED IN THE IMAGE AREAS AND THE NON-IMAGE AREAS ARE CLEAR AND CLEAN.
3. THE PLATE IS SMOOTH AND THE GUM HAS BEEN PROPERLY BURNISHED.
4. YOU MAKE SURE THE PLATE IS PROTECTED IN A FOLDER, PRESS-READY AND CAPABLE OF RUNNING THE ENTIRE RUN.

A TAPE OF THIS MODULE IS AVAILABLE.

INFORMATION

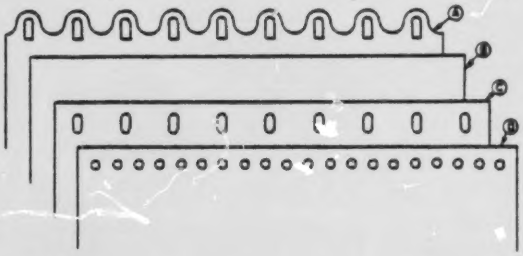
3M MAKES FOUR ADDITIVE PLATES (E, L, M AND R) WHICH ARE ALL EXPOSED TO A NEGATIVE AND DEVELOPED ABOUT THE SAME:

E	ALUMINUM FOIL ON PAPER BASE	ONE SIDE	5,000 RUN
L	ALUMINUM FOIL ON PAPER BASE	TWO SIDES	5,000 RUN
M	SOLID ALUMINUM	TWO SIDES	5,000 RUN
R	SOLID ALUMINUM	TWO SIDES	25,000 RUN

THE PRESS RUN IS WHAT THE COMPANY WILL GUARANTEE, IF THE PRESS IS SET UP PROPERLY WITH PAPER ROLLER SETTINGS. THE PLATES WILL LAST TWO OR THREE TIMES (ASSUMING WE HAVE MADE A PERFECT PLATE).

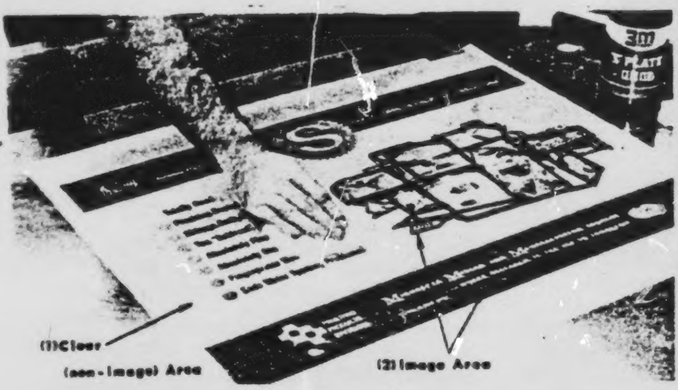
PRE-SENSITIZED WERE FIRST INTRODUCED BY 3M IN 1950. MOST LARGE PRESSES STILL USE PLATES WHICH ARE SENSITIZED IMMEDIATELY BEFORE EXPOSURE (COST SAVING). WHEN HANDLING, KEEP FINGERS OFF PLATE SURFACE. HANDLE UNDER YELLOW LIGHT AND CARRYING BY THE CORNERS.

DIFFERENT PLATE ENDS ARE AVAILABLE; (A) SERRATED OR LOOPED, (B) STRAIGHT, (C) SLOTTED OR OVAL HOLE, AND (D) PIN-BAR PUNCHED, THE MOST COMMON FOR NEWER, SMALL OFFSET PRESSES.

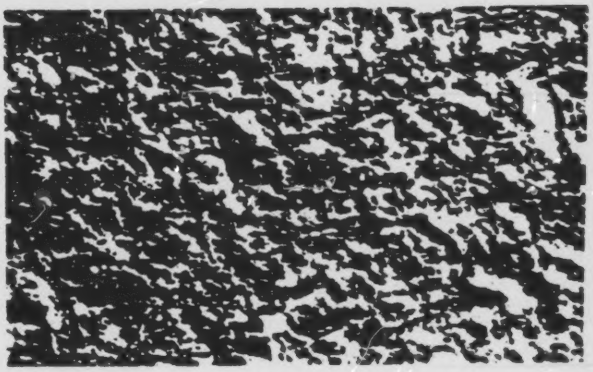


OFFSET PLATES VARY IN THICKNESS, FOR SMALL OFFSETS FROM .005" TO .012". MOST PLATES ARE PURCHASED TO EXACTLY FIT A SPECIFIC PRESS AND SPECIFIC PLATE CLAMPS.

OFFSET PLATES HAVE TWO DISTINCT AND SEPARATE AREAS: (1) THE CLEAR NON-IMAGE AREA AND (2) THE INK RECEPTIVE IMAGE AREA.



INFORMATION



THE CLEAR AREA HAS NO IMAGE AND ITS GRAIN (SEE ILLUSTRATION MAGNIFIED 60 TIMES) HAS A NATURAL WATER-HOLDING NATURE. THIS AREA WILL ATTRACT AND HOLD A THIN FILM OF WATER. IT IS ALSO CALLED WATER-RECEPTIVE OR INK-REPELLENT.

THE IMAGE IS ACTUALLY THE PRINTING IMAGE WHICH HAS A SLIGHTLY "GREASY" NATURE SO THAT IT REPELS THE APPLICATION OF WATER BUT ACCEPTS A FILM OF APPLIED INK, ALSO KNOWN AS THE PRINTING OR IMAGE-BEARING AREA.

ALL METAL PLATES HAVE GRAIN (PAPER OR PLASTIC PLATES HAVE BEEN TREATED CHEMICALLY TO RETAIN WATER).

ADDITIONAL HINTS:

A. IF THIS IS THE FIRST TIME YOU HAVE DONE PLATEMAKING HERE, USE AN E PLATE FOR YOUR FLAT AND HAVE AN EXPERIENCED PERSON WORK ALONG WITH YOU. PLATES GET EXPENSIVE VERY FAST (R PLATE FOR A SMALL OFFSET COSTS US $1.21, CHIEF 17). THESE STEPS ARE FOR ONE-SIDED ADDITIVE PLATE.

B. AVOID SPLASHING: RED LACQUER WILL NOT WASH OUT OF CLOTHES. DROPS OF WATER ON THE PLATE WILL HINDER DEVELOPMENT. A DROP OF WATER ON THE FLAT WILL DISTURB THE DYE AND ALLOW THE PLATE TO BE EXPOSED THERE.

C. THE PLATE MUST BE WET WITH DESENSITIZER GUM WHEN THE RED LACQUER IS ADDED. DO NOT WAIT BETWEEN STEPS.

D. ADDITIONAL LACQUER MAY BE ADDED ONLY WHILE THE PLATE IS STILL WET WITH LACQUER. IF THE PLACE GOES DRY DURING THE LACQUERING STAGE, POUR IT ON A NON-IMAGE AREA.

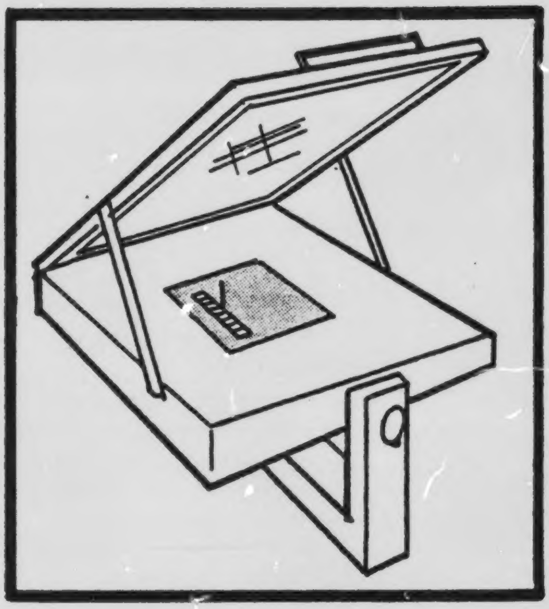
E. DRIED LACQUER MAY BE REMOVED FROM A NON-IMAGE AREA BY DISSOLVING WITH MORE LACQUER.

F. A MOIST, DAMPENED SPONGE MUST BE COMPLETELY MOIST; A DRY SPONGE WILL CAUSE SCRATCHES.

G. ALWAYS USE THE CLEANEST SPONGE FOR DESENSITIZER GUM.

JOB STEPS

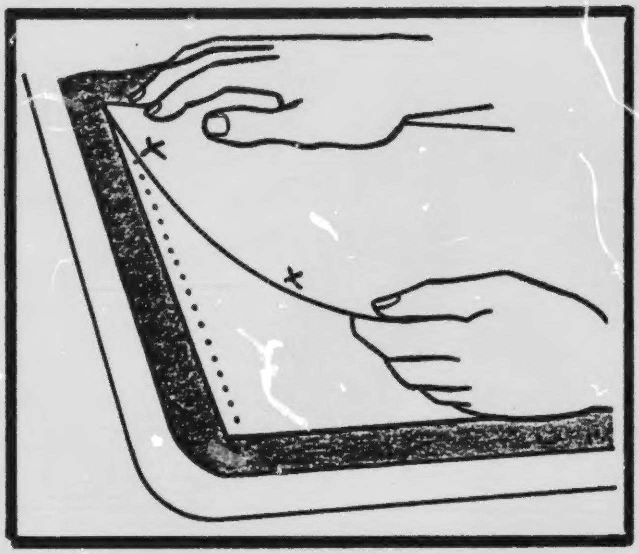
1. TAKE YOUR EQUIPMENT TO THE PLATEROOM.



2. GET THE COMPLETED FLAT AND CHECK FOR DUST, DIRT OR EXCESS OPAQUE. BE SURE ALL OPAQUE IS DRY.

3. OPEN THE PLATEBURNER AND CHECK THE GLASS TO BE SURE IT IS CLEAR AND CLEAN. IF NECESSARY, CLEAN IT.

4. GET YOUR PLATE FROM THE PLATE STORAGE CABINET. OPEN THE PACKAGE ENTIRELY AND LIFT OUT THE PLATE. SET THE PLATE ON THE RUBBER BLANKET OF THE EXPOSURE UNIT TO BE SURE NO MOISTURE GETS ON IT. CLOSE THE PACKAGE AND DRAWER (USE A 10" X 15" 'E' PLATE IF THIS IS PRACTICE).



5. MARK THE FLAT WITH TWO X'S ON THE GRIPPER END AND ONE X ON THE GUIDE. LINE UP THE GRIPPER END OF THE PLATE WITH THE GRIPPER END OF THE FLAT. DO THE SAME WITH THE GUIDE SIDE (THERE IS A 3M IN THE UPPER RIGHT CORNER OF THE R PLATES, THAT IS THE BEST SIDE TO USE FIRST). PRESS THE TAPE OVER YOUR TACKING HOLES TO TEMPORARILY HOLD THE FLAT AND PLATE TOGETHER (MOVEMENT DURING VACUUM MAY PUT THEM OUT OF REGISTER OTHERWISE). HAVE SOMEONE SHOW YOU THE EASY WAY TO REGISTER THE PLATE AND FLAT.

6. CLOSE THE GLASS FRAME AND LATCH. TURN ON MASTER SWITCH. TURN ON VACUUM PUMP. MAKE SURE BLEED VALVE IS CLOSED. NOW CHECK THE IMAGE AGAIN WHILE THE VACUUM GOES UP AND PAST 22.

WORD GUIDE

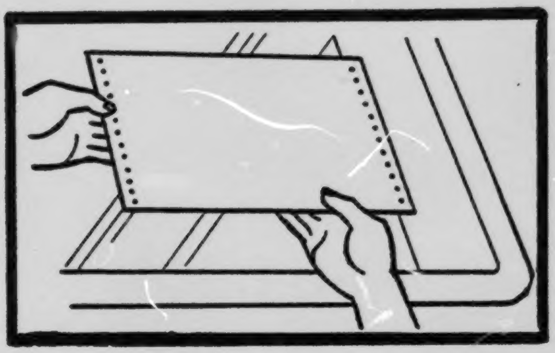
UNIFORM - EVEN, THE SAME.

JOB STEPS

7. FLIP THE FRAME, LATCH. SET TIMER TO ONE MINUTE (GO PAST TWO THEN BACK), FLIP LAMP SWITCH TO "ON TIMER" AND DOUBLE CHECK TIME.

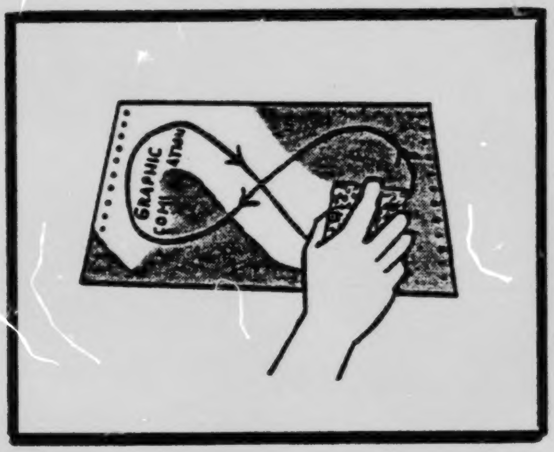
8. WHEN EXPOSED, TURN OFF LAMP SWITCH. FLIP BACK FRAME. TURN OFF VACUUM. TURN BLEED 1/4 TURN, OPEN GLASS FRAME AND REMOVE PLATE AND FLAT. CLOSE GLASS AND FLIP FRAME SO GLASS IS DOWN. TURN OFF MASTER SWITCH.

9. CAREFULLY, REMOVE THE FLAT FROM THE PLATE (AVOID FINGER PRINTS).



10. PRE-WET TWO SMALL SPONGES AND REMOVE THE CAPS FROM THE 'R' PROCESS GUM AND 'R' DEVELOPER.

11. PLACE THE PLATE ON THE GLASS (A FEW DROPS OF WATER WILL HELP HOLD THE PLATE).



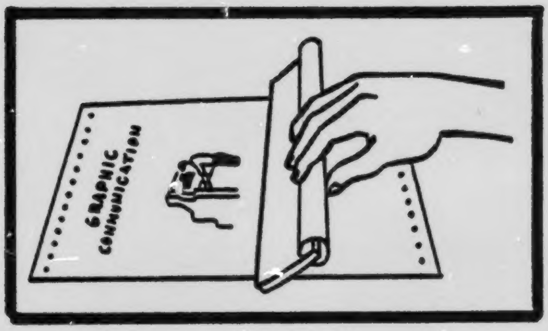
12. DESENSITIZE THE PLATE WITH 'R' PROCESS GUM. POUR A SMALL AMOUNT ON A MOIST, CLEAN SPONGE. THEN, POUR ½ OZ. (A 1½" POOL) ON THE PLATE SURFACE, NEAR CENTER. USE A FIGURE EIGHT MOTION TO COMPLETELY COVER THE ENTIRE PLATE SURFACE. WORK QUICKLY TO COVER THE ENTIRE SURFACE, USING THE FIGURE EIGHT MOTION LIGHTLY IN BOTH DIRECTIONS. WIPE THE PLATE FOR ABOUT ONE MINUTE TO REMOVE ALL UNEXPOSED EMULSION.

13. USING A SECOND SLIGHTLY DAMPENED SPONGE (ONE WITH A SLIGHT RED STAIN), LACQUER THE PLATE WITH 'R' DEVELOPER. POUR ABOUT 1/3 OZ. (1" POOL) IN THE CENTER AND USE THE FIGURE EIGHT MOTION LIGHTLY IN BOTH DIRECTIONS UNTIL THE IMAGE IS UNIFORM AND STRONGLY COLORED. 'E' PLATES WILL BE A RED COLOR; 'R' PLATES A BRIGHT DEEP RED.

JOB STEPS

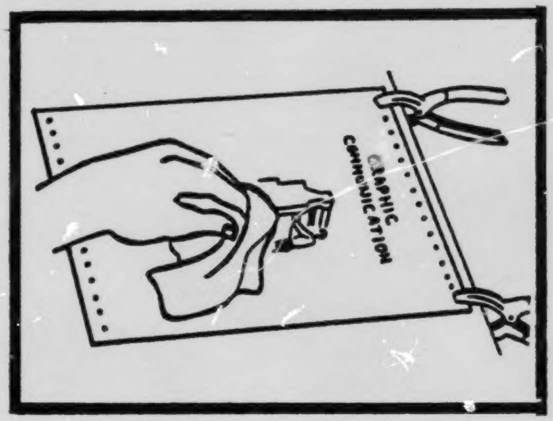
14. USING THE OTHER SIDE OF THE LACQUER SPONGE, REMOVE EXTRA CHEMICALS FROM THE SURFACE OF THE PLATE WHILE YOU HAVE THE WATER GENTLY RUNNING (ROOM TEMPERATURE).

15. AFTER YOU WASH THE PLATE, WET THE SQUEEGEE. THEN, VERY GENTLY, WIPE THE EXCESS WATER OFF THE SURFACE OF THE PLATE. LIFT THE PLATE, SQUEEGEE OFF THE GLASS. LAY THE PLATE FACE DOWN ON THE GLASS AND SQUEEGEE OFF THE BACK. BE VERY CAREFUL YOU DON'T SCRATCH THE PLATE.



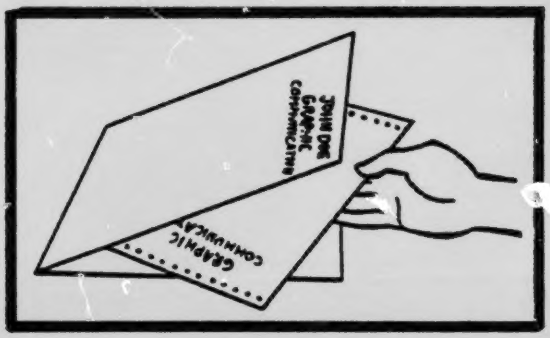
16. PLACE THE PLATE ON THE FINISHING TABLE FACE UP AND GUM THE PLATE. POUR A 1/4 OZ. OF GUM (THERE MAY BE ENOUGH LEFT ON THE FIRST SPONGE) ON THE PLATE AND SPREAD UNIFORMLY.

17. USING THE OPEN END OF A COTTON PAD, GENTLY BUFF THE PLATE COMPLETELY DRY (CHEESE CLOTH IS BEST). THE FORCED HEAT MAY BE USED IF YOU ARE IN A HURRY, OTHERWISE DON'T USE IT. USE THE RUBBER TIPPED CLAMPS ON THE ENDS TO HOLD THE PLATE (OFF THE IMAGE AREA, EXTREME ENDS).



18. WHEN THE PLATE IS DRY, REMOVE THE CLAMPS AND WIPE ANY WET DROPS THAT MAY HAVE STAYED UNDERNEATH THE PLATE.

19. GET A 20" X 25" SHEET (UNDER THE FINISHING TABLE). FOLD THIS IN HALF TO MAKE A FOLDER; THEN, PLACE THE PLATE IN THIS FOLDER TO PROTECT IT. WITH A BOLD FELT MARKER, WRITE (YOUR NAME IF A PROJECT) THE JOB IT IS FOR IN 1/2" CAPITAL LETTERS. IF A PRODUCTION JOB, BE SURE TO SIGN THE JOB ENVELOPE.



JOB STEPS

20. SECURE YOUR AREAS:

A. WASH THE SPONGES OUT IN RUNNING WATER, SQUEEZING THE SPONGE. THEN, SOAK UP CLEAN WATER, SQUEEZE, SOAK SPONGE AGAIN. DO THIS 12 TIMES EACH.

B. CLEAN THE NECK OF THE 'R' DEVELOPER BY PLACING YOUR FINGER IN THE NECK FOR 1/2" AND TWISTING. THEN, WIPE ANY LACQUER FROM THE THREADS. THERE MUST BE NO RED LACQUER IN OR OUT OF THE NECK. CAP.

C. PLACE THE CAP BACK ON THE GUM.

D. WASH OFF THE SQUEEGEE AND GLASS.

E. DISCARD THE COTTON PAD OR CHEESE CLOTH.

F. DO YOU HAVE YOUR FLAT? (KEEP THIS IN THE PLATE FOLDER WITH THE PLATE).

graphics

unit: PLATEMAKING AND PROOFING

capital area career center

module: 1401 12 004
1401 12 004 3 **date:** 12/77 **level:**

skill title: EXPOSING AND PROCESSING SUBTRACTIVE OFFSET PLATES

developed & written by: GLEN PETTIT

visuals by: MARY ANN GAMEL

PERFORMANCE OBJECTIVE

YOU ARE GOING TO LEARN:

HOW TO POSITION THE FLAT ON THE PLATE, EXPOSE, DEVELOP, PROCESS AND EVALUATE A SUBTRACTIVE OFFSET PLATE (K).

AND IN ORDER TO DO THIS YOU WILL NEED:

A COMPLETED FLAT AND A REQUEST TO MAKE A SUBTRACTIVE OFFSET PLATE FOR A PRESS RUN OFF UP TO 50,000 IMPRESSIONS

NUARC PLATEMAKER

PLATE SINK

FINISHING TABLE

3M 'K' PLATE

FLAT

3M SUBTRACTIVE DEVELOPER

3M SUBTRACTIVE GUM

DEVELOPING BLOCK

COTTON PAD

PLATE FOLDER

WE WILL KNOW YOU CAN DO IT WHEN:

1. YOU ACCURATELY POSITION THE IMAGE ON THE PLATE MAKING SURE IT IS SQUARE.
2. YOU MAKE SURE THE IMAGE IS BRIGHT, RED AND NON-IMAGE AREAS COMPLETELY CLEAR AND CLEAN.
3. YOU PROPERLY BURNISH THE GUM AND SEE TO IT THAT THE PLATE IS SMOOTH.
4. YOU PUT THE FINISHED PLATE IN A PROTECTIVE FOLDER.
5. YOU SEE TO IT THAT THE PLATE IS ABLE TO PRINT 50,000 IMPRESSIONS.

A TAPE OF THIS MODULE IS AVAILABLE.

INFORMATION

THE 3M COMPANY MAKES FOUR SUBTRACTIVE PLATES: (K, S, S-P AND T). THE K, S AND P ARE EXPOSED TO A NEGATIVE, THE S-P TO A POSITIVE. PROCESSING IS SIMILAR FOR ALL FOUR:

K	SOLID ALUMINUM	ONE SIDE	50,000	RUN
S	SOLID ALUMINUM	ONE SIDE	100,000	RUN
S-P	SOLID ALUMINUM	ONE SIDE	100,000	RUN
T	SOLID ALUMINUM	ONE SIDE	200,00	RUN

ON THE AVERAGE PRESS, YOU SHOULD GET WELL OVER THESE RUNS. ONLY THE K IS AVAILABLE FOR SMALL OFFSETS ($1.21 SAME AS 'R'). THE OTHERS ARE FOR LARGER PRESSES. THE LARGER THE RUN, THE MORE COST.

ON SUBTRACTIVE PLATES, THE LACQUER IS ALREADY ON THE PLATE AND YOU MUST REMOVE THE LACQUER IN THE NON-IMAGE AREAS. THE HANDLING, CARE, PLATE ENDS AND PRINCIPLES ARE SIMILAR TO ADDITIVE PLATES. LARGER PLATES TEND TO BE THICKER, AND LONGER RUNNING PLATES HAVE MORE GROIN.

IF THIS IS THE FIRST TIME YOU HAVE EVER PROCESSED SUBTRACTIVE PLATES, USE A SAMPLE PROJECT 'K' PLATE FIRST (THE BOX OF SAMPLE PROJECT PLATES IS IN THE TOP DRAWER OF THE PLATE STORAGE CABINET... YOU'LL NEED THIS FOR MODULE NUMBER 1401 12 005 ANYWAY). ALL OF THE INSTRUCTIONS APPLY TO THIS SMALL SAMPLE PROJECT PLATE, JUST USE LESS CHEMICALS. USE THE FLAT FROM STRIPPING MODULE NUMBER 1401 11 003.

ADDITIONAL HINTS:

A. DO NOT ALLOW WATER TO TOUCH THE PLATE UNTIL AFTER THE DEVELOPER HAS BEEN APPLIED, REMOVED ALL NON-IMAGE LACQUER AND THE DEVELOPER HAS BEEN SQUEEGED OFF COMPLETELY. WATER WILL CAUSE THE POLYMER TO STICK TO THE GRAINED PLATE SURFACE AGAIN.

B. BE SURE TO USE ENOUGH DEVELOPER; EXCESS DEVELOPER DOES NO HARM (TOO LITTLE WILL CAUSE UNEVEN DEVELOPMENT.) ADD AS SOON AS NECESSARY

C. HEAVY PRESSURE OR EXCESSIVE RUBBING IN ONE AREA MAY REMOVE FINE HIGHLIGHT DOTS.

D. ON LARGE K PLATES, USE THE 3M DEVELOPING PAD FOR QUICKER COVERAGE.

JOB STEPS

READ THRU ALL STEPS FIRST, THEN START:

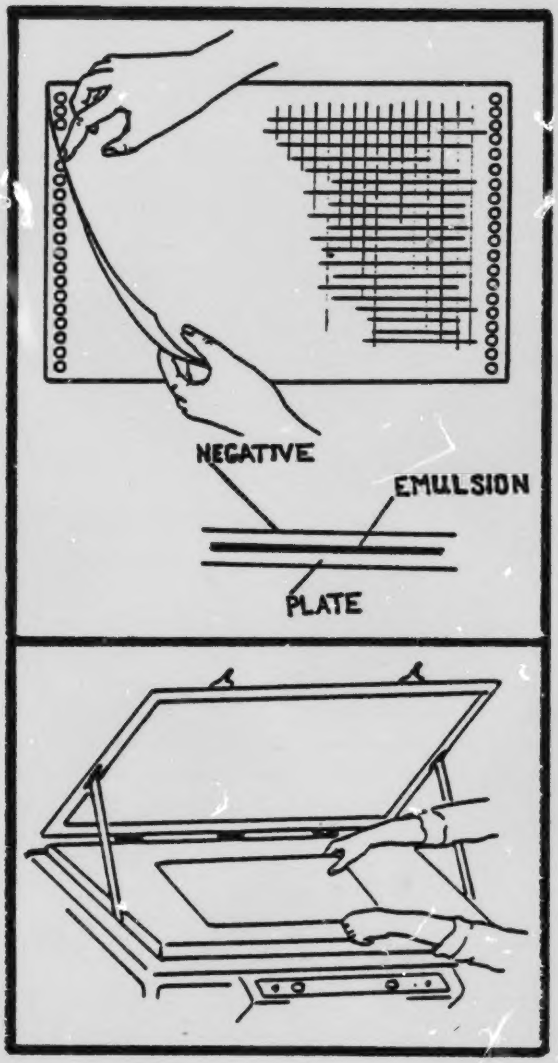
1. TAKE ALL YOUR EQUIPMENT TO THE PLATEROOM.

2. OBTAIN THE COMPLETED FLAT AND CHECK FOR DUST, DIRT OR EXCESS OPAQUE; BE SURE ALL OPAQUE IS DRY.

3. LOOK AT THE PLATEBURNER.

4. GET A 'K' PLATE. IF FROM THE PACKAGE, OPEN IT ENTIRELY, LIFT OUT THE PLATE, THEN CLOSE THE PACKAGE AND DRAWER.

5. LINE UP THE GRIPPER AND GUIDE SIDES OF THE FLAT AND PLATE, PRESS THE TACKING HOLES. TURN THIS PAIR OVER TO CHECK SQUARENESS FROM BOTH FRONT AND BACK. (MASKING SHEETS ARE ALWAYS CUT OVERSIZE SLIGHTLY.) THE RED PRE-LACQUERED SIDE OF THE 'K' PLATE IS THE EMULSION, (NEGATIVE AND PLATE, EMULSION TO EMULSION).



6. CENTER THE FLAT AND PLATE. CLOSE THE GLASS FRAME, TURN ON MASTER SWITCH, AND VACUUM, BLEED CLOSED. FLIP WHEN PRESSURE IS 22.

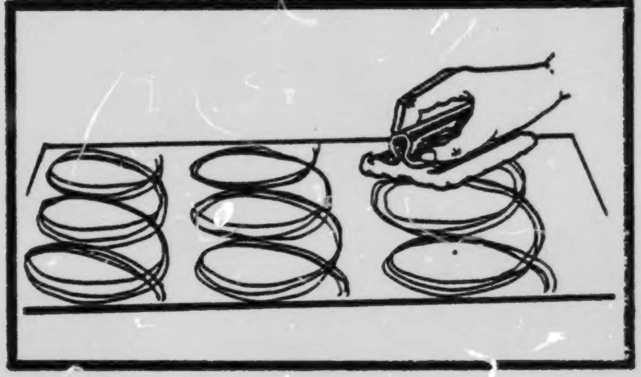
7. SET TIMER FOR________ MINUTE, EXPOSE.

8. TURN OFF LAMP SWITCH WHEN DONE, THEN FLIP. TURN OFF VACUUM, OPEN BLEED 1/4 TURN, THEN OPEN GLASS. REMOVE FLAT AND PLATE. CLOSE GLASS, FLIP DOWN, TURN OFF MASTER SWITCH.

JOB STEPS

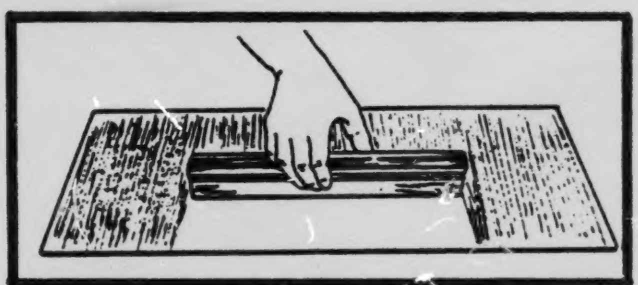
9. PLACE THE EXPOSED 'K' PLATE ON THE DRY (NOT WET; DO NOT USE WATER) GLASS IN THE PLATE SINK. PLACE A COTTON PAD UNDER THE HARD RUBBER DEVELOPING BLOCK AND HOLD IT IN PLACE WITH YOUR THUMB AND FINGERS.

10. POUR SOME SUBTRACTIVE DEVELOPER ON THE COTTON PAD TO WET IT. THEN POUR 1/2 OZ. ON THE PLATE, 1 1/2" POOL (USE 1 OZ. FOR LARGE 11" X 18" PLATE, A 2 1/2" POOL). QUICKLY, WITHOUT SPLASHING, USE LIGHT PRESSURE AND A CIRCULAR MOTION TO SPREAD THE SUBTRACTIVE DEVELOPER OVER THE ENTIRE PLATE (6" CIRCLES).



11. IN ABOUT 1/2 THE EXPOSURE TIME THE UNEXPOSED NON-IMAGE AREA SHOULD START DISSOLVING OFF. ADD MORE SUBTRACTIVE DEVELOPER IF NECESSARY. YOU MAY USE A LITTLE EXTRA PRESSURE IN THE NON-IMAGE AREAS. BE SURE THE PLATE AND THE DEVELOPER ARE STILL IN-DATE (NOT EXPIRED).

12. DO NOT USE WATER. WHEN ALL LACQUER FROM THE NON-IMAGE AREAS HAS BEEN REMOVED, USE A SOFT RUBBER SQUEEGEE TO REMOVE EXCESS DEVELOPER.



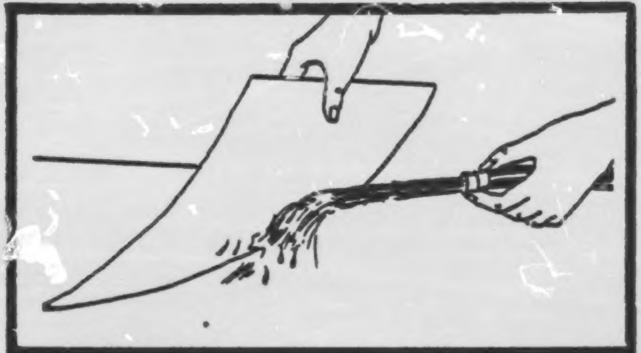
13.A. AFTER YOU REMOVE ALL REMAINING DEVELOPER WITH THE SQUEEGEE, WASH THE PLATE WITH RUNNING WATER. USE A PIECE OF PAPER HAND TOWEL (WADDED UP) AND WIPE THE ENTIRE PLATE UNTIL ALL THE NON-IMAGE AREA ACCEPT WATER.

WORD GUIDE

UNIFORM - EVEN, THE SAME.

JOB STEPS

13.B.
TILT THE PLATE TO CHECK FOR UNIFORM WETTING. WASH THE UNDERSIDE OF THE PLATE, CAREFUL NOT TO SCRATCH THE EMULSION IMAGE.



14. SQUEEGEE PLATE COMPLETELY TO REMOVE ALL EXCESS WATER. DRY PLATE. USING 1/2 A COTTON PAD, GUM THE PLATE WITH 3M SUBTRACTIVE GUM ON THE FINISHING TABLE. BUFF DRY WITH THE OTHER 1/2 COTTON PAD.

15. PLACE THE 'K' PLATE IN A PLATE FOLDER WITH THE FLAT AND IDENTIFY. SECURE YOUR AREA, DISPOSE OF ALL DIRTY PADS.

graphics

unit: PLATEMAKING AND PROOFING

capital area career center

module: 1401 12 005
1401 12 005 3 **date:** 12/77 **level:**

skill title: DETERMINING EXPOSURE TIME WITH SENSITIVITY GUIDES

developed & written by: GLEN PETTIT

visuals by:

WORD GUIDE

HALATION - IMAGE ENLARGEMENT (NEGATIVE PLATE) OR SHARPENING (POSITIVE PLATE) FROM UNDERCUTTING OR PENETRATION OF EXCESS LIGHT.

EXPOSURE - THE ACT OF SHINING AN ULTRAVIOLET LIGHT SOURCE ON THE LIGHT SENSITIVE MATERIAL.

GRAY SCALE - A STRIP OF FILM HAVING STEPS OF PROGRESSIVELY GREATER DENSITY. IT IS USED TO MEASURE THE AMOUNT OF ULTRAVIOLET LIGHT TRANSMISSION.

PLATE - THE PRINTING PLATE - IMAGED OR NON-IMAGED.

PERFORMANCE OBJECTIVE

YOU ARE GOING TO LEARN:

HOW TO DETERMINE THE BEST EXPOSURE TIME FOR ANY PHOTOGRAPHIC MATERIAL AND UNDERSTAND EXPOSURE DISTANCE, GRAY SCALE USE, INTEGRATORS AND HALATION.

AND IN ORDER TO DO THIS YOU WILL NEED:

A SENSITIVITY GUIDE, MANUFACTURERS' SPECIFICATIONS

PLATEMAKER

PLATESINK

FINISHING TABLE

STOUFFER TRANSPARENT GRAY SCALE

K - PLATE (3 1/2 X 6)

E - PLATE (3 1/2 X 6)

R - PLATE (3 1/2 X 6)

E - PLATE (5 1/2 X 9)

PLATEMAKING CHEMICALS

WORD GUIDE

NON-IMAGED AREAS - BACKGROUND OR NON-PRINTING PORTIONS OF FILM OR PLATE.

IMAGE AREAS - THAT PART OF THE PLATE OR SHEET OCCUPIED BY IMAGE.

PHOTOGRAPHIC - USED IN PHOTOGRAPHY; EXPOSED TO LIGHT.

WE WILL KNOW YOU CAN DO IT WHEN:

1. YOU CAN TAKE ANY PHOTOGRAPHIC MATERIAL OR PLATE AND DETERMINE THE CORRECT EXPOSURE TIME FOR THE IDEAL PLATE WITH A SENSITIVITY GUIDE AND THE MANUFACTURER'S SPECIFICATIONS (RECOMMENDATIONS).
2. YOU HAVE PLATES THAT ARE FLAT, PROPERLY IMAGED, WITH CLEAR NON-IMAGE AREAS, COMPLETELY SMOOTH AND PROPERLY PROTECTED FOR MAXIMUM PRESS RUN.

A TAPE OF THIS MODULE IS AVAILABLE.

WORD GUIDE

VACUUM FRAME - A DEVICE FOR ACHIEVING INTIMATE CONTACT BETWEEN LIGHT SENSITIVE MATERIAL AND FILM BY MEANS OF VACUUM.

ULTRAVIOLET LIGHT - THE ACTINIC OR USABLE PART OF THE SPECTRUM NEEDED TO REACT OR HARDEN LIGHT SENSITIVE COATINGS.

CARBON ARC - A HIGH INTENSITY ULTRAVIOLET LIGHT SOURCE USING CARBON RODS FOR LIGHT EMISSION.

MERCURY VAPOR - A KIND OF ULTRAVIOLET LIGHT SOURCE INVOLVING A HOT TUBE CONTAINING AN ATMOSPHERE OF MERCURY VAPOR.

SINGLE POINT LIGHT SOURCE - SINGLE AREA OF EMISSION AS COMPARED TO TWIN ARC LIGHTS OR A TUBE.

REFLECTOR - THE MIRROR LIKE SURFACE POSITIONED BEHIND THE LIGHT SOURCE TO DIRECT LIGHT.

FLAT - THE COMBINATION OF IMAGED FILM AND MASKING TAPED INTO A COMPOSITE PIECE.

NEWTON RINGS - RAINBOW EFFECT SEEN WHEN FILM AND PLATE ARE IN TIGHT CONTACT UNDER A GLASS SURFACE SUCH AS A VACUUM FRAME.

INFORMATION

QUALITY EXPOSURE EQUIPMENT IS ESSENTIAL FOR ACCURATE PLATE IMAGING. ALL PLATES SHOULD BE EXPOSED IN A STURDY VACUUM FRAME TO A HIGH INTENSITY SOURCE OF ULTRAVIOLET LIGHT (CARBON ARC, PULSED XENON OR MERCURY VAPOR).

A SINGLE POINT LIGHT WITH A REFLECTOR GIVES THE BEST RESULTS. MULTIPLE SOURCES OF LIGHT INCREASE THE CHANCE FOR IMAGE DISTORTION.

SUFFICIENT TIME MUST BE GIVEN FOR EVACUATION OF ALL THE AIR BY THE VACUUM PUMP BEFORE EXPOSURE. LARGE FLATS MAY REQUIRE 1 1/2 MINUTES TO COME INTO GOOD CONTACT WITH THE PLATE. A VISUAL INSPECTION IS THE BEST METHOD FOR CHECKING GOOD CONTACT.

IF YOU CAN SEE "NEWTON RINGS" (SMALL, RAINBOW-LIKE CIRCLES) BETWEEN THE FILM AND VACUUM GLASS, YOU HAVE GOOD CONTACT AND PROPER VACUUM. NO NEWTON RINGS MEANS AIR IS TRAPPED AND HALATION (UNWANTED IMAGE ENLARGEMENT) CAN OCCUR. TO CORRECT, "BLEED" AIR FOR A FEW SECONDS, THEN RE-DRAW THE VACUUM.

WORD GUIDE

OPAQUE - DARK; TENDING TO BLOCK OUT LIGHT.

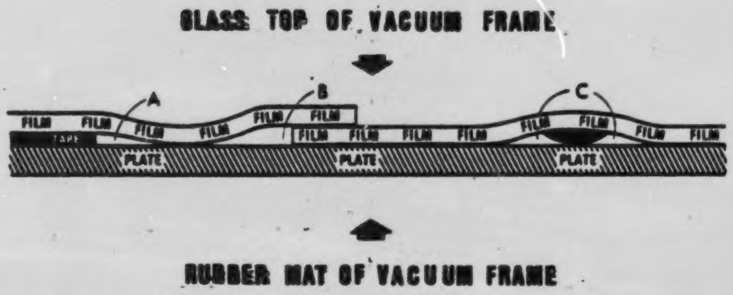
PIN HOLES - PIN-POINT SIZE HOLES OR BREAKS IN DEVELOPED FILM.

MILEAGE - SLANG FOR IMAGE LIFE OF A PLATE; HOW LONG IT WILL LAST.

INFORMATION

A VACUUM READING OF 22 INCHES IS IDEAL. A LOW READING INDICATES A LEAK SOMEWHERE; CHECK (OIL THE PUMP EVERY 6 MONTHS).

THE RUBBER BLANKET OR DIAPHRAGM MUST BE SOFT, CLEAN AND PLIABLE FOR GOOD CONTACT.



POOR CONTACT WILL RESULT ON THE PLATE IF EXCESS TAPE (A) IS USED OR PIECES OF FILM (B) ARE OVERLAPPED. OPAQUING SOLUTIONS FOR COVERING PIN HOLES SHOULD BE THIN (C) AND BE APPLIED TO THE BASE SIDE (RIGHT READING) OF THE FILM. DIRT OR APAQUE ON EITHER SIDE OF THE GLASS WILL GIVE YOU PROBLEMS, CHECK BEFORE EVERY EXPOSURE.

UNIFORM EXPOSURE OF THE ENTIRE PLATE SURFACE CAN ONLY BE OBTAINED WHEN THE PLATE IS AT AN ADEQUATE DISTANCE FROM THE POINT LIGHT SOURCE. WITHOUT UNIFORM EXPOSURE, IMAGE VALUES AND PLATE LIFE WILL VARY. THE IMAGE ON THE EDGES OF A LARGER PLATE WILL BREAK DOWN AND WEAR OUT IN THE MIDDLE OF A RUN BECAUSE THEY ARE UNDER-EXPOSED. MOST SMALL AND MEDIUM SIZE PRINT SHOPS HAVE SELF-CONTAINED EXPOSURE UNITS. IN NO CASE SHOULD THE DISTANCE BETWEEN THE LIGHT SOURCE AND THE VACUUM FRAME BE LESS THAN THE DIAGONAL OF THE LONGEST PLATE TO BE EXPOSED.

ADEQUATE EXPOSURE OF PLATES FACILITATES EASE OF DEVELOPMENT AND ASSURES MAXIMUM MILEAGE (IMPRESSIONS) FROM NEGATIVE PLATES.

WORD GUIDE

NEGATIVE ACTING PLATE - A PLATE THAT YIELDS A POSITIVE IMAGE FROM A REVERSE IMAGED FILM.

GRIPPER EDGE - THE LEAD EDGE OF THE PRINTED SHEET, NAMED FROM THE PRESS GRIPPER THAT PULLS THE SHEET INTO THE PRINTING COUPLE OF THE PRESS.

INFORMATION

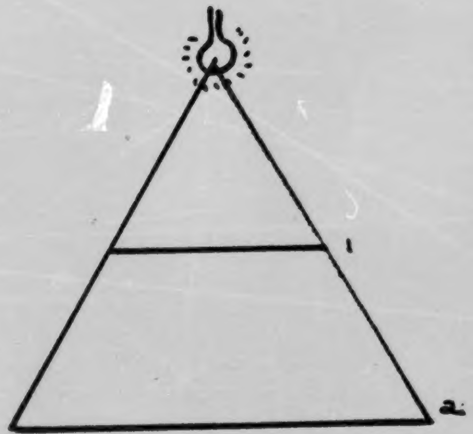
TO CHECK FOR ADEQUATE EXPOSURE ON PLATES, USE A 10 OR 21-STEP "STOUFFER" GRAY SCALE (TRANSPARENT SENSITIVITY GUIDE). THIS GUIDE MEASURES THE AMOUNT OF ULTRAVIOLET LIGHT REACHING THE PLATES' SURFACE. IT IS USUALLY POSITIONED ON THE GRIPPER EDGE OF THE PLATE, OUT OF THE PRINTING AREA AND EXPOSED WITH THE FLAT. ON LARGER PLATES THIS IS USUALLY REQUIRED.

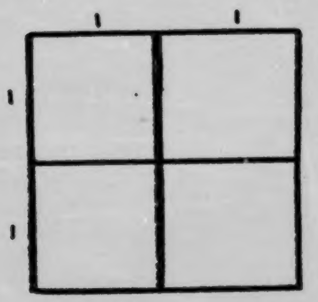
THE GRAY SCALE READING AT THE PLATE EDGE (NOT UNDER FILM) IS A SOLID 7. A SOLID 7 MEANS THE STEP 7 IS AS DARK AS STEP 1 - BE SURE TO RUB THE GRAY SCALE EQUALLY AS MUCH AS THE IMAGE (USUALLY GIVE THE SCALE AN EXTRA COUPLE OF RUBS AS IT IS AT THE EDGE AND OFTEN RUBBED TOO [illegible]IGHT).

A SOLID 7 WILL PRODUCE THE BEST QUALITY AND LONGEST RUN. A SOLID 4 WILL LAST ONLY 1/3 OR LESS OF MAXIMUM RUN AND A SOLID 10 WOULD TEND TO FILL IN SMALL NON-IMAGE AREAS AND MAKE EVERYTHING A LITTLE BOLDER. IF YOU WANT TO INCREASE THE STEPS (4 TO 6), DOUBLE THE EXPOSURE - TO DECREASE (9 TO 7), CUT THE EXPOSURE IN HALF.

THE GRAY SCALE IS AN EXACT EXPOSURE CALIBRATION TOOL AND SHOULD BE TREATED CAREFULLY. AS WITH ALL FILMS, IT WILL GRADUALLY YELLOW WITH AGE FROM CONSTANT EXPOSURE TO ULTRAVIOLET LIGHT. REPLACE WHEN NECESSARY (EVERY 2-3 YEARS). CLEAN THE GRAY SCALE WITH STANDARD FILM CLEANER WHEN IT BECOMES DIRTY OR STAINED. OUR 21 STEP GRAY SCALES COST $4.50 EACH AND CANNOT BE ACCURATELY DUPLICATED BY US.

UNIFORM EXPOSURE IS IMPOSSIBLE IN A SMALL PLATEMAKER IF THE LIGHT SOURCE IS CLOSE TO THE IMAGE. NOTICE THE DISTANCE OF OUR LIGHT TO THE CENTER OF THE GLASS, THEN THE DISTANCE TO THE EDGE OF THE GLASS. WHEN YOU DOUBLE THE DISTANCE OF THE LIGHT TO SURFACE, YOU GET 1/4 THE AMOUNT OF LIGHT PER SQUARE FOOT. TO COMPENSATE, YOU WOULD HAVE TO EXPOSE FOUR TIMES AS LONG.





DOUBLE THE DISTANCE
YOU COVER 4 TIMES
THE DISTANCE

INFORMATION

WHAT THIS MEANS ON OUR PLATEMAKER IS THAT WE WOULD NOT GET EVEN EXPOSURE IF WE USED ALL OF THE FRAME SIZE; THE EDGES WOULD BE SLIGHTLY UNDEREXPOSED (THE REFLECTOR HELPS SOME).

HALATION IS THE UNWANTED DIFFUSION OF LIGHT. THE BASIC CAUSES OF HALATION ARE REFLECTED LIGHT AND POOR CONTACT, USUALLY WITH OVER-EXPOSURE. THREE AREAS TO WATCH ARE:

LIGHT REFLECTION - A OUT-OF-FOCUS, CRACKED OR DUSTY REFLECTOR, REFLECTIONS FROM GLOSSY OR NEWLY PAINTED WALLS, OR STRAY LIGHT FROM WINDOWS.

OVER-EXPOSURE - A RESULT OF USING AN OLD YELLOWED GRAY SCALE OR MOVING THE LIGHT SOURCE CLOSER TO THE FRAME WITHOUT PROPERLY REDUCING THE EXPOSURE TIME.

POOR CONTACT - CAUSED BY POOR CONTACT DUE TO DIRT, DUST, TAPE, TRAPPED AIR BETWEEN PLATE AND FILM, POOR STRIPPING METHODS OR INADEQUATE VACUUM.

GOOD HOUSEKEEPING IS THE BEST PREVENTION. MATERIALS AND EQUIPMENT KEPT CLEAN AND IN GOOD CONDITION PERMITS MAXIMUM CONTACT.

ALL PLATES COME WITH INSTRUCTION SHEETS.

BASIC SOURCE: 3M "PLATEMAKERS GUIDE".

STUDY THE FOLLOWING VOCABULARY WORDS AND THEIR DEFINITIONS. YOU SHOULD BE ABLE TO CORRECTLY USE AND IDENTIFY THESE TERMS:

ACTINIC LIGHT - THAT PART OF THE LIGHT SPECTRUM THAT ACTIVATES OR HARDENS A LIGHT-SENSITIVE COATING.

ADDITIVE PLATES - PLATES REQUIRING APPLICATION OF A LACQUER OR DEVELOPER TO REINFORCE THE IMAGE.

ARC - A SOURCE OF INTENSE ULTRAVIOLET LIGHT CREATED BY CARBON ELECTRODES.

BLANKET - RUBBER SURFACED COVERING ON THE OFFSET CYLINDER THAT IS USED TO TRANSFER AN INKED IMAGE FROM THE PRINTING PLATE TO THE PRINTING STOCK.

BLEED - IMAGE AREA THAT EXTENDS BEYOND TRIM LINES OF SHEET OR FOLD.

BLIND - AN IMAGED PLATE SURFACE THAT WILL NOT ACCEPT INK.

BROKEN IMAGE - AN INCOMPLETE IMAGE ON A PLATE.

BURNING - EXPOSING OF LIGHT SENSITIVE MATERIAL TO ULTRAVIOLET LIGHT.

CAMERA - A PHOTOGRAPHIC MEANS OF ENLARGING, REDUCING, COLOR SEPARATING AND SCREENING MATERIALS FOR PRINTING REPRODUCTION.

CAMERA HALFTONE - HALFTONE PRODUCED BY SCREENING A CONTINUOUS TONE ORIGINAL.

COLOR BREAK - LINE OR EDGE ALONG WHICH DIFFERENT COLORS START OR END.

CONTAMINATION - UNWANTED, HARMFUL FOREIGN MATTER.

CONTINUOUS TONE - A FILM OR PRINTED IMAGE SHOWING SHADE VARIATION BY MEANS OF GRADUAL DENSITY CHANGES (AS OPPOSED TO HALFTONE).

CONTRAST - THE DENSITY COMPARISON OF HIGHLIGHT AND SHADOW AREAS IN IMAGED FILM OR PRINTED COPY.

INFORMATION

DELETION FLUID - LIQUID USED TO REMOVE UNWANTED IMAGE AREAS ON A LITHO PLATE.

DENSITY - DEGREE OF DARKNESS OR OPACITY.

DESENSITIZER - A CHEMICAL USED TO TREAT AND MAINTAIN WATER RECEPTIVITY OF A PLATE BACKGROUND.

DEVELOPER - A CHEMICAL USED TO ISOLATE AND REVEAL AN IMAGE AREA. SEE "ADDITIVE" AND "SUBTRACTIVE" DEVELOPER.

DEVELOPING - THE ACT OF APPLYING DEVELOPER.

DOT - THE INDIVIDUAL ELEMENT OF A HALFTONE.

DOT GAIN - SLIGHT ENLARGEMENT OF A DOT, EITHER DURING EXPOSURE, DEVELOPMENT OR ON THE PRESS.

DOT LOSS - DISAPPEARANCE OF A DOT FROM THE PLATE. ALSO CALLED CHOKE.

DOT SPREAD - DOT ENLARGEMENT COVERING A BROAD RANGE OF CAUSES SUCH AS HALATION OR INK SPREAD. ALSO CALLED FLAIR.

EDGE SHADOW - A DARKENING ALONG THE EDGE OF A HALFTONE CAUSED BY HALATION.

EMULSION - LIGHT SENSITIVE COATING.

EXPOSURE UNIT - A DEVICE USED TO EXPOSE LIGHT SENSITIVE MATERIALS.

FILM NEGATIVE - A PHOTOGRAPHIC IMAGE WHICH IS THE REVERSE OF THE ORIGINAL OR PRINTED COPY.

FILM POSITIVE - A PHOTOGRAPHIC IMAGE WHICH RELATES TO THE ORIGINAL OR PRINTED COPY.

FIXER - CHEMICAL TO BE APPLIED TO AN EXPOSED AND DEVELOPED MATERIAL TO RENDER IT INSENSITIVE TO LIGHT.

GUMMING - THE PROCEDURE OF APPLYING A PROTECTIVE GUM FILM TO THE SURFACE OF A LITHO PLATE.

HALFTONE - THE GRADATION OF TONES ACHIEVED BY VARYING THE SIZE OF SOLID DOTS ON A NON-IMAGED BACKGROUND.

HALFTONE PERCENTAGE - THE PERCENT OF THE AREA COVERED BY HALFTONE DOTS TO THE TOTAL AREA.

HONING - A MECHANICAL METHOD USED TO REMOVE UNWANTED IMAGE AREAS FROM PLATE.

IMAGE BOND - DEGREE OF ADHESION OF IMAGE TO THE PLATE.

IMAGE GUARD - AN IMAGE CAPPING RESINOUS CHEMICAL DESIGNED TO INCREASE PLATE MILEAGE.

INK RECEPTIVE - ABLE TO HOLD OR ACCEPT INK.

LIGHT INTEGRATOR - AN INSTRUMENT USING A PHOTO CELL TO MEASURE AND CONTROL LIGHT DURATION UNTIL SET AMOUNT OF LIGHT IS RECEIVED.

LIGHT SOURCE - A DEVICE THAT EMITS ULTRAVIOLET RADIATION.

LINE COPY - IMAGE MADE UP OF TYPE, LINES, OR SOLIDS, EXCLUSIVE OF HALFTONES.

INFORMATION

MASKING - PROCESS OF COVERING LIGHT SENSITIVE AREAS OF MATERIAL TO BLOCK OUT EXPOSURE.

OFFSET - TRANSFER OF INK IMAGE FROM PLATE TO BLANKET TO PRINTING STOCK.

OFFSET PLATE - A PLATE THAT PRINTS BY OFFSET PRINCIPLE. SEE "OFFSET".

ORIGINAL - CAMERA READY ART OR KEYLINE.

ORTHOCHROMATIC - SENSITIVE TO ALL COLORS BUT RED (LIKE THE LINE FILM WE USE).

OVER EXPOSURE - TOO MUCH LIGHT AS EVIDENCED BY HALATION OR DOT LOSS.

PINK IMAGE - A WEAKLY DEVELOPED IMAGE; SPECIFICALLY ONE PROCESSED WITH "R" DEVELOPER.

PLASTIC - (A) APPLYING TO SHEETS OF PLASTIC.

(B) CAPABLE OF BEING PLIABLE, ESPECIALLY AT ROOM TEMPERATURE.

PLUGGING - FILLING OR BRIDGING OF HALFTONES, TYPE OR FINE REVERSES BY TOO MUCH DEVELOPER AND/OR INK.

POINT LIGHT SOURCE - AN ULTRAVIOLET LIGHT SOURCE HAVING A VERY SMALL OR POINT SOURCE.

POSITIVE-ACTING PLATE - A PLATE THAT PRODUCES A "POSITIVE" IMAGE FROM A FILM POSITIVE.

PRE-EXPOSURE - ACCIDENTAL EXPOSURE OF LIGHT SENSITIVE MATERIAL BEFORE USE.

PRE-PLATE PROOF - ANY TYPE OF PROOF PREPARED AS AN INTERMEDIATE STEP BEFORE PLATE MAKING.

PRESENSITIZED - A MATERIAL HAVING A FACTORY APPLIED, LIGHT SENSITIVE COATING.

PRESS LIFE - NUMBER OF ACCEPTABLE PRINTS A PLATE PRODUCES.

PRESS PROOF - AN EARLY, TENTATIVE PRINT MADE ON THE PRESS IN ORDER TO EXAMINE FOR COLOR BALANCE, FIT, REGISTER, COMPLETENESS, ETC.

PROCESSING - THE STEPS INVOLVED IN PREPARING THE LITHOGRAPHIC PLATE FOR PRINTING.

PROOFING - THE PROCEDURE OF PREPARING ANY PROOF FOR VIEWING FOR APPROVAL.

PROOFING PRESS - PRESS ON WHICH THE PROOF IS PRINTED.

REGISTRATION - THE CORRECT ALIGNMENT AND POSITION OF COPY IN RELATIONSHIP TO THE SHEET EDGE, LOCATION ON THE SHEET AND RELATIONSHIP TO OTHER COPY OR COLORS.

ROLL-UP - INKING THE PLATE IMAGE ON THE PRESS.

SCRATCHES - ABRASION MARKS THAT ACCEPT INK OR BREAK THE IMAGE.

SCREEN - THE MASS OF FINE DOTS THAT MAKE UP A PICTURE OR TINT. ALSO KNOWN AS HALFTONE.

SCRIBING - CONTROLLED SCRATCHING OF METAL TO PRODUCE OR COMPLETE AN IMAGE.

INFORMATION

SCUMMING - ADHERENCE OF INK TO NON-PRINTING AREAS OF THE PLATE.

SENSITIZER - LIGHT SENSITIVE COATING CAPABLE OF REACTING TO ULTRAVIOLET LIGHT.

SLIP SHEET - ANY PAPER OR PLASTIC SHEET USED TO SEPARATE ONE PLATE FROM ANOTHER, SLIP SHEETS ALSO USED TO SEPARATE FRESHLY PRINTED PLASTIC, METAL, ETC.

SQUEEGEE - TO REMOVE EXCESS OR UNWANTED CHEMICAL OR WATER FROM A SURFACE BY MEANS OF A SQUEEGEE.

STENCIL - A FORM OF LIGHT MASK PREPARED BY PERFORATING OR CUTTING A THIN SHEET OF PAPER.

STOP-OUT - A LIQUID CHEMICAL USED TO DELETE FILM EDGES AND OTHER UNWANTED COPY ON POSITIVE PLATES.

STRIPPING - PROCESS OF ARRANGING AND AFFIXING FILM TO MASKING SHEETS.

SUBTRACTIVE SYSTEM - ONE IN WHICH UNWANTED BACKGROUND AREAS ARE REMOVED BY A DEVELOPING STEP. (COLOR-KEY OR SUBTRACTIVE PLATES)

TUSCHE - A LIQUID CHEMICAL USED TO REPAIR BROKEN IMAGES OR HOLES IN COPY.

WALK-OFF - PLATE IMAGE LOSS THAT OCCURS ON THE PRESS.

YELLOW LIGHTS - GENERALLY, YELLOW FLUORESCENT TUBES HAVING LOW ULTRAVIOLET EMISSION. USED IN PREPARATION DEPARTMENTS.

JOB STEPS

1. COLLECT YOUR EQUIPMENT AND GO TO THE PLATE ROOM.

2. GET A 3 1/2" X 6" SAMPLE OF EACH OF THE THREE PLATES FROM THE BOX MARKED "PLATEMAKING PROJECT MATERIALS" (TOP DRAWER OF PLATE STORAGE CABINET).

3. USE ONE OF YOUR OLD FLATS (MOD 1401 11 003) AS A NEGATIVE AND EXPOSE THE "E" PLATE AS NORMAL. THEN, PROCESS (AS IN MOD 1401 12 003).

4. USE PLATE CHEMICALS AND THE SAME FLAT TO EXPOSE AND PROCESS A "K" PLATE (AS IN MOD 1401 12 004).

5. USE THE SAME FLAT TO EXPOSE BOTH SIDES OF AN "R" PLATE. DEVELOP ONE SIDE AS NORMAL. DEVELOP THE SECOND SIDE. THEN, CONTINUE TO RUB THE PLATE USING EXTRA PRESSURE ON THE IMAGE AREA. AFTER A MINUTE, YOU'LL SEE THE IMAGE FADE DOWN TO A LIGHT PINK. CONTINUE RUBBING AS NORMAL WITH THE DEVELOPER AND THE IDEAL RED IMAGE WILL RETURN. DO THIS TO LEARN WHAT CAN BE DONE TO SAVE A PLATE IF IT IS OVERDEVELOPED. BURNISH WITH PROCESS GUM WHEN FINISHED.

6. WITH THE 5 1/2" X 9" "E" PLATE SAMPLE AND THE 21-STEP STOUFFER TRANSPARENT GRAY SCALE (TAKE A 5" X 8" MASKING SHEET, CUT A 1/2" X 4" HOLE FROM THE CENTER AND CAREFULLY TOP THE GRAY SCALE WITH MASKING TAPE ON THIS), EXPOSE THE FOLLOWING EXPOSURE TEST ON YOUR "E" PLATE:

   A. MAKE SIX OR SEVEN EXPOSURES NEAR THE CENTER OF THE PLATE (BE SURE TO COVER UP THE REST OF THE PLATE) AT 1/4 MINUTE INTERVALS, STARTING AT 15 SECONDS.

   B. MOVE THE PLATE TOWARD YOU NEAR THE EDGE OF THE FRAME AND EXPOSE FOR ONE MINUTE.

   C. PLACE THE PLATE IN THE NEAR LEFT CORNER AND EXPOSE FOR ONE MINUTE.

JOB STEPS

7. DEVELOP AND PROCESS AS NORMAL.

8. COMPARE ALL THE EXPOSURES. AN IDEAL EXPOSURE IS A SOLID STEP 7 (SOLID 6 IS GOOD). WRITE DOWN THE EXPOSURE TIMES ON THE PLATE.

9. SECURE YOUR AREA. PUT AWAY ALL MATERIALS.

10. SHOW YOUR WORK TO YOUR INSTRUCTOR.

graphics

unit: PLATEMAKING

capital area career center

1401 12 006

module: 1401 12 006 3 **date:** 2/77 **level:** II

skill title: MAKING A PROOF

developed & written by: GLEN PETTIT AND MATTHEW SPIRO

visuals by: BEVAN SUITS

WORD GUIDE

PROOF - A PRINT OR COPY OF EXACTLY WHAT IS GOING TO BE PRINTED ON THE PRESS.

STRIPPED FLAT - A MASKING SHEET WITH NEGATIVES TAPED IN POSITION, OPEN AREAS CUT OUT AND PIN HOLES (UNWANTED SMALL OPEN AREAS) CORRECTED.

UV - (ULTRAVIOLET) AN INVISIBLE LIGHT.

DYLUX PROOF PAPER - A PAPER THAT TURNS BLUE WHEN EXPOSED TO UV. THE BLUE IMAGE IS INSTANT AND PROCESS IS DRY (NO CHEMICALS).

SILVERPRINT PAPER - A CHEAP PAPER COATED WITH SMALL SILVER PARTICLES. WHEN EXPOSED TO LIGHT AND THEN DEVELOPED IN WATER, THE SILVER TURNS BROWN.

PERFORMANCE OBJECTIVE

YOU ARE GOING TO LEARN:

HOW TO MAKE A PROOF OF A STRIPPED FLAT USING

A. SILVERPRINT PAPER
B. DYLUX PROOF PAPER

AND IN ORDER TO DO THIS YOU WILL NEED:

PLATEMEKER (PULSED XENON LIGHT SOURCE)

SILVERPRINT PAPER AND FIXER

DYLUX PROOF PAPER AND UV FILTER

STRIPPED FLAT

SINK WITH RUNNING WATER

WE WILL KNOW YOU CAN DO IT WHEN:

1. THE SILVERPRINT PROOF IS FLAT, HAS A SHARP BROWN IMAGE AND APPEARS CENTERED ON THE PROOF.

2. THE DYLUX PROOF IS FLAT, HAS A SHARP BLUE IMAGE, AND IS CENTERED ON THE PROOF.

WORD GUIDE

PSS - PRESS SIZE SHEET - ACTUAL SIZE OF THE PAPER GOING THROUGH THE PRESS.

FTS - FINAL TRIM SIZE - THE SIZE OF THE JOB WHEN FINISHED. THERE MAY BE SEVERAL FTS SHEETS ON ONE PSS.

INFORMATION

WHY IS A PROOF MADE?

BECAUSE IT PROVIDES AN OPPORTUNITY TO CORRECT ERRORS BEFORE A JOB IS PRINTED. IT IS MUCH MORE DIFFICULT AND EXPENSIVE TO MAKE A CORRECTION AFTER THE PLATE HAS BEEN MADE. ALL PRINT SHOPS WILL HAVE THE PROOF CHECKED BY EITHER THE CUSTOMER OR THE SUPERVISOR BEFORE PRINTING.

THERE ARE TWO COMMON KINDS OF PROOFING PAPER:

A. SILVERPRINT

B. DYLUX

THE SILVERPRINT PAPER IS EXPOSED, DEVELOPED IN WATER, FIXED AND DRIED. THE PROCESS TAKES ABOUT 20 MINUTES AND THE MATERIAL COSTS ABOUT 10¢ PER SQUARE FOOT.

DYLUX PAPER IS EXPOSED WITH UV AND DEACTIVATED (TURNED OFF) WITH FLUORESCENT LIGHT. IT IS A DRY PROCESS, TAKES ABOUT 4 MINUTES AND COSTS ABOUT 15¢ PER SQUARE FOOT.

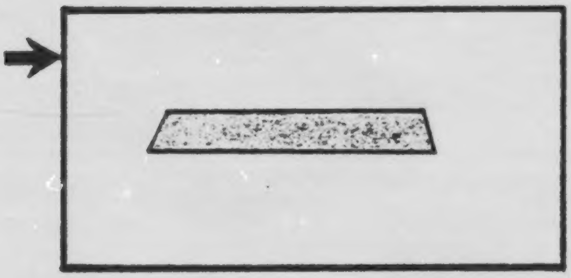
BOTH TYPES OF PROOFING PAPER MUST BE HANDLED ONLY UNDER LOW-LIGHT CONDITIONS, OR YELLOW PLATE-SAFE LIGHTS. THEY SHOULD BE STORED IN A COOL (NOT OVER 80°F OR 27°C) DRY (BELOW 35% HUMIDITY) PLACE.

BEFORE EXPOSING, AVOID TOUCHING THE IMAGE AREA.

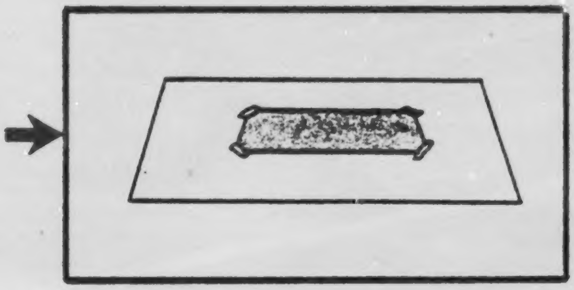
WORK IN AN AREA WITH GOOD VENTILATION.

JOB STEPS

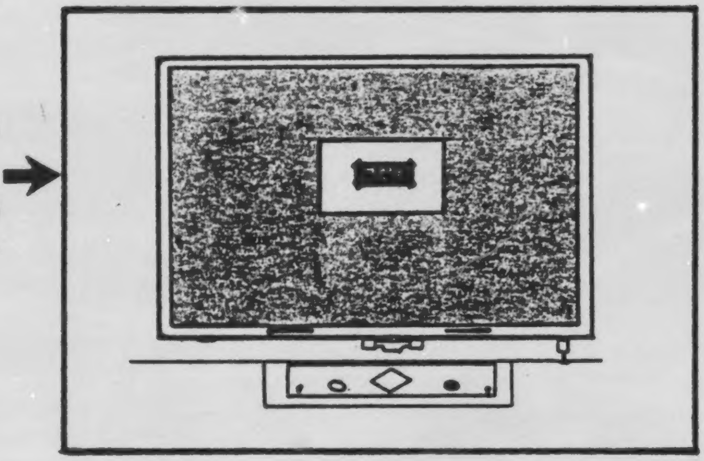
1. YOU CAN USE ANY FLAT FOR THIS MOD. USE THE SAME FLAT FOR BOTH THE SILVERPRINT AND DYLUX SYSTEMS. BE SURE THE GLASS ON THE PLATEMAKER IS CLEAN.



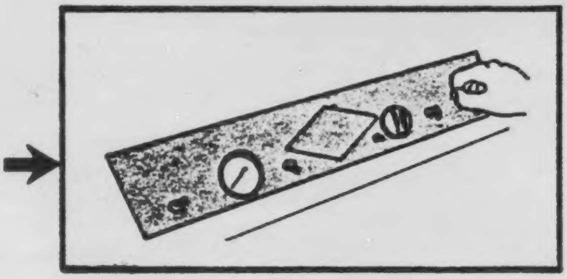
2. GET A PIECE OF SILVERPRINT PAPER (5 1/2 X 8 1/2) FROM THE PLATE STORAGE CABINET (TOP RIGHT DRAWER). THE YELLOWISH SIDE IS THE LIGHT-SENSITIVE EMULSION. PLACE IT AGAINST THE EMULSION SIDE OF THE FLAT (THE DULL, WRONG-READING SIDE). USE A PIECE OF MASKING TAPE TO HOLD THEM IN POSITION.



3. LIFT THE GLASS OF THE PLATEBURNER. PLACE THE FLAT AND SILVERPRINT PAPER UNDER THE GLASS SO THAT THE SILVERPRINT PAPER IS ON THE BOTTOM. YOU SHOULD HAVE THE SILVERPRINT PAPER ON THE BOTTOM WITH ITS EMULSION SIDE DOWN, AND THE GLASS ABOVE BOTH OF THEM.

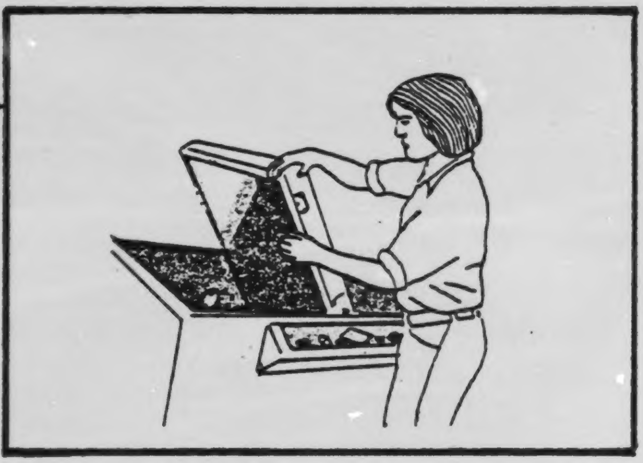


4. MAKE THE EXPOSURE ON THE NUARC PLATEBURNER:
   A. CLOSE THE GLASS COVER AND LOCK THE TWO LEVERS ON THE FRONT.
   B. TURN ON THE MASTER POWER SWITCH (1).
   C. TURN ON THE VACUUM PUMP (2). WAIT TEN SECONDS FOR THE VACUUM TO BUILD UP.



JOB STEPS

D. WHEN THE VACUUM PRESSURE GAUGE READS 20 POUNDS PER SQUARE INCH, RELEASE LATCH (3) AND TURN THE VACUUM FRAME SO THAT THE GLASS IS DOWN, FACING THE LIGHT SOURCE.



E. SET THE TIMER (4) TO ONE MINUTE.

F. TO EXPOSE, FLIP THE LIGHT SWITCH (5) UP TO "TIMER". THIS WILL TURN ON THE LIGHT. AFTER ONE MINUTE, THE LIGHT WILL BE SHUT OFF AUTOMATICALLY.

****

CAUTION: DO NOT LOOK AT THE LIGHT DURING OR IMMEDIATELY AFTER THE EXPOSURE.

****

5. AFTER THE EXPOSURE:

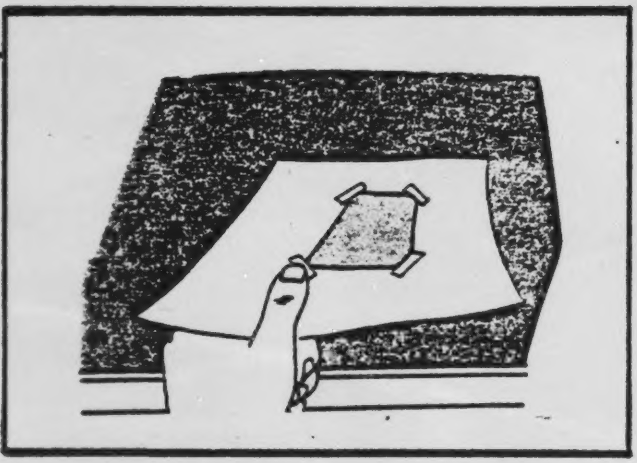
A. TURN OFF THE LIGHT SWITCH (5).

B. TURN THE VACUUM FRAME SO THAT THE GLASS IS UP.

C. TURN OFF VACUUM (2).

D. UNLOCK AND OPEN THE GLASS TOP SLOWLY.

E. TAKE OUT THE FLAT AND THE EXPOSED SILVERPRINT.



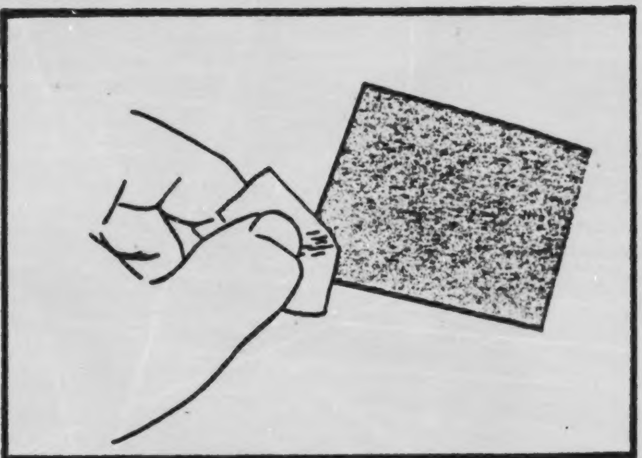
F. CLOSE THE GLASS TOP AND LOCK IT.

G. TURN THE VACUUM FRAME SO THAT THE GLASS IS DOWN.

H. TURN OFF THE MASTER POWER SWITCH (1).

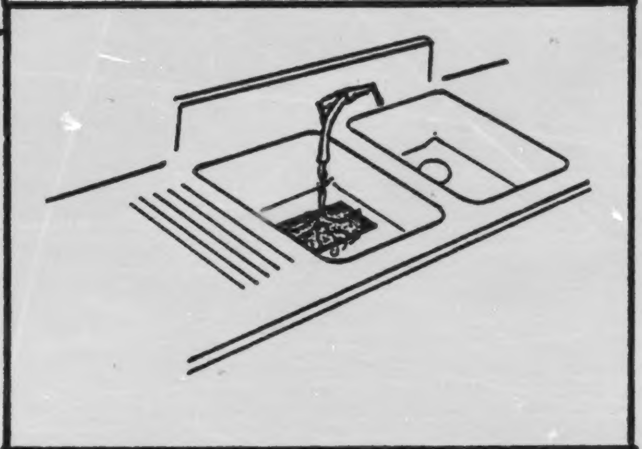
JOB STEPS

6. CAREFULLY REMOVE THE MASKING TAPE FROM THE SILVERPRINT. BE CAREFUL NOT TO TEAR THE SILVERPRINT.



7. PLACE THE SILVERPRINT IN THE SINK WITH THE IMAGE (EMULSION SIDE) UP.

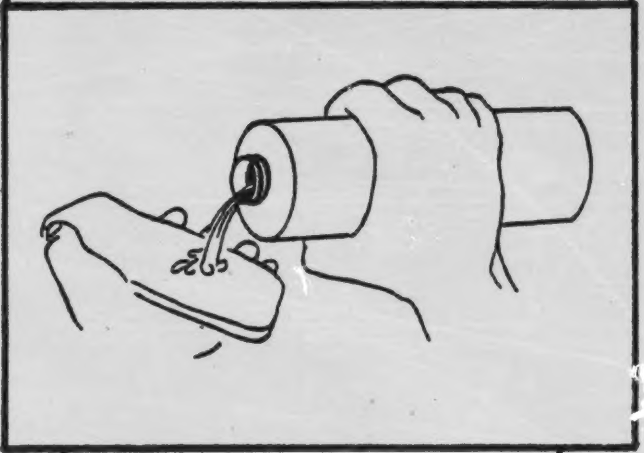
8. TURN ON THE WATER SLOWLY. IT SHOULD BE WARM (ABOUT 80°F OR 27°C). LET THIS LUKEWARM WATER RUN OVER THE PROOF FOR 30 SECONDS, ALL THE WHILE GENTLY WIPING THE SILVERPRINT WITH YOUR HAND. THE IMAGE WILL BECOME BROWN.



9. WITH THE IMAGE FACING UP, LAY THE SILVERPRINT DOWN FLAT. USING A SQUEEGEE, WIPE OFF THE EXCESS WATER.

10. GET THE SILVERPRINT FIXER FROM UNDER THE PLATE SINK. IT IS IN A BROWN BOTTLE.

11. WET A 1/2 COTTON PAD WITH THE FIXER AND WIPE THE PAD OVER THE WHOLE IMAGE. WIPE FOR ONE MINUTE. IF YOU DON'T DO THIS, THE WHITE AREAS OF THE IMAGE WILL BECOME BROWN.



12. ONCE AGAIN, WASH THE PROOF IN RUNNING WATER. THIS WASH REMOVES THE FIXER. AFTER WASHING FOR 30 SECONDS, ONCE AGAIN SQUEEGEE THE WATER OFF THE PRINT, THIS TIME FROM BOTH SIDES. LET THE PRINT DRY FOR AT LEAST 10 MINUTES BEFORE YOU DRAW ANY FTS OR PSS LINES ON IT.

JOB STEPS

13. YOUR PROOF SHOULD BE:

    A. FLAT, WITHOUT TEARS OR WRINKLES.

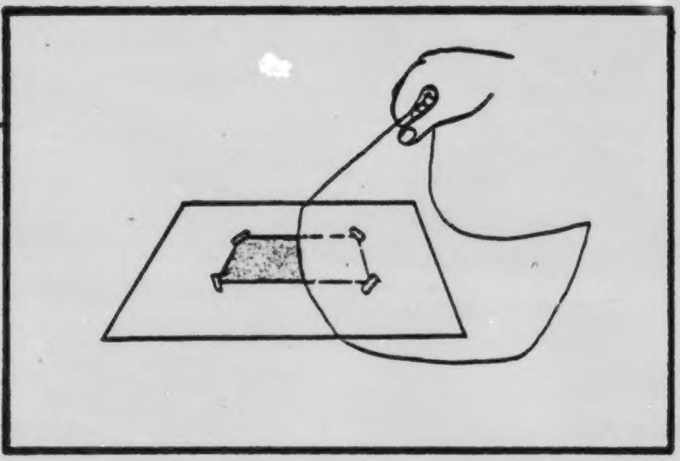
    B. EVENLY DARK BROWN, WITHOUT LIGHT SPOTS (POSSIBLY CAUSED BY FINGERPRINTS).

    C. WHITE AREAS NEARLY WHITE, WITHOUT STAINS, SPOTS, OR SMEARS.

    D. WITHOUT BLURS AT THE EDGES OF THE BROWN, AND CENTERED.

14. IF YOUR PROOF MEETS THESE STANDARDS, THEN YOU'VE DONE IT RIGHT. CLEAN THE SINK, RETURN THE FIXER, AND THROW AWAY THE COTTON PAD. CONTINUE THE JOB STEPS FOR THE DYLUX PROOF. WHEN BOTH ARE DONE, SHOW THEM TO THE INSTRUCTOR.

15. GET A 5 1/2 INCH BY 8 1/2 INCH PIECE OF DYLUX PROOF PAPER FROM THE PLATE STORAGE CABINET (TOP RIGHT DRAWER). THE EMULSION SIDE OF THE DYLUX PAPER IS A LIGHT YELLOW. PLACE IT, EMULSION TO EMULSION, JUST AS YOU DID EARLIER, AGAINST THE FLAT.

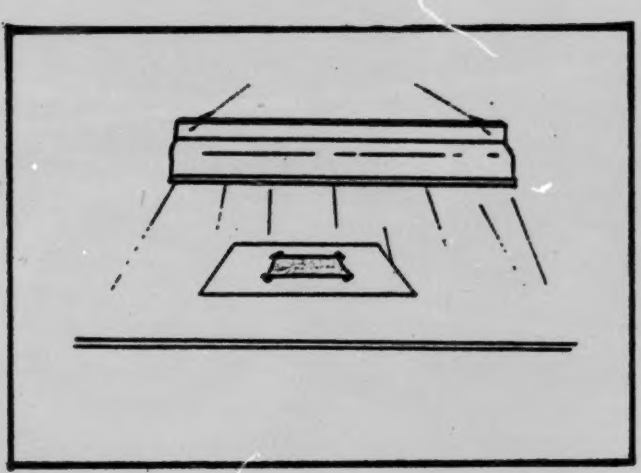


16. AFTER YOU HAVE OPENED THE GLASS ON THE VACUUM FRAME, PUT DOWN THE DYLUX PAPER AND FLAT AND OVER THEM LAY THE LARGE ORANGE SHEET OF TRANSPARENT PLASTIC. THIS PLASTIC IS CALLED THE DYLUX FLEXIBLE FILTER, AND IT ALLOWS ONLY UV LIGHT THROUGH TO THE DYLUX PAPER.

JOB STEPS

17. JUST AS YOU DID IN STEP (4), EXPOSE THE DYLUX PAPER; BUT THIS TIME FOR 1 1/2 MINUTES (90 SECONDS).

18. AFTER THE EXPOSURE, THE EXPOSED AREA IS BLUE. THE BACKGROUND, OR NON-EXPOSED AREA, MUST BE CLEARED (MADE WHITE). IN ORDER TO DO THIS, YOU NEED ONLY EXPOSE THE PROOF TO WHITE LIGHT. ONE HOUR OF EXPOSURE TO NORMAL ROOM LIGHT, OR ONE MINUTE OF EXPOSURE IN THE PLATEBURNER WILL CLEAR THE YELLOWISH BACKGROUND.



19. BECAUSE THE DYLUX PROCESS IS "DRY", THE PROOF IS READY TO USE OR "MARK UP" RIGHT AWAY. YOUR PROOF SHOULD BE:

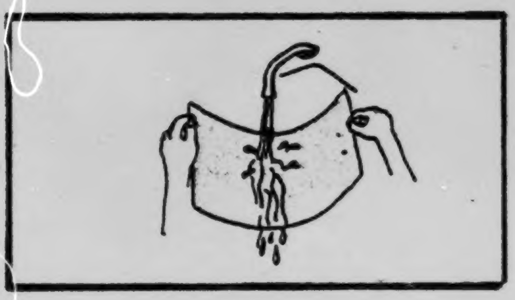
    A. FLAT, WITHOUT TEARS OR WRINKLES.

    B. OF A UNIFORM, BRIGHT BLUE.

    C. ALL WHITE IN THE BACKGROUND.

    D. IN SHARP FOCUS (WITHOUT BLUR) AND THE IMAGE CENTERED.

20. IF THE ORANGE PLASTIC NEEDS CLEANING, CLEAN IT WITH WATER OR FILM CLEANER. PUT IT BACK IN ITS ENVELOPE AND PUT THE ENVELOPE IN ITS DRAWER. BE SURE THAT THE PROOF MATERIALS ARE NEAT AND THE AREA IS CLEAN.



JOB STEPS

21. DO THE QUIZ ON PROOFING MATERIALS AFTER JOB STEPS. CHECK THEM AGAINST THE ANSWERS AT THE BOTTOM OF THIS PAGE. IF YOU GET ANY WRONG, REREAD THE SECTION OF THE MOD THAT EXPLAINS IT. IF YOU HAVE QUESTIONS, ASK THE INSTRUCTOR. SHOW YOUR FLAT AND YOUR PROOFS TO THE INSTRUCTOR FOR APPROVAL AND CREDIT.

ANSWERS TO QUIZ

1 - D
2 - C
3 - A
4 - B
5 - D
6 - C
7 - D
8 - A
9 - SHOW INSTRUCTOR

SELF QUIZ

(WRITE YOUR ANSWERS ON A SEPARATE SHEET OF PAPER. AFTER YOU COMPLETE THESE QUESTIONS, CHECK YOUR ANSWERS WITH THE CORRECT ONES ON PAGE 9.)

1. A SILVERPRINT PROOF WILL HAVE A ________________ IMAGE.

   A. SILVER C. BLACK
   B. BLUE D. BROWN

2. WHAT IS USED TO DEVELOP SILVERPRINT PROOF PAPER?

   A. DEVELOPER C. WATER
   B. FIXER D. UV LIGHT

3. GOLD COLORED PAPER WITH NEGATIVES STRIPPED UP ON IT IS CALLED A ________________.

   A. FLAT C. P.S.S.
   B. SHEET D. F.T.S.

4. WHICH IS THE QUICKEST WAY TO MAKE A PROOF?

   A. PRINT ON PRESS
   B. DYLUX PROOF
   C. SILVERPRINT PROOF

5. THE ACTUAL SIZE OF THE PAPER GOING THROUGH THE OFFSET IS CALLED THE ________________.

   A. BASIC SIZE C. F.T.S.
   B. D.P.S. D. P.S.S.

6. ON UNEXPOSED DYLUX PROOF PAPER, WHICH SIDE IS THE EMULSION?

   A. TOP SIDE C. YELLOWISH SIDE
   B. BLUE SIDE D. DARK SIDE

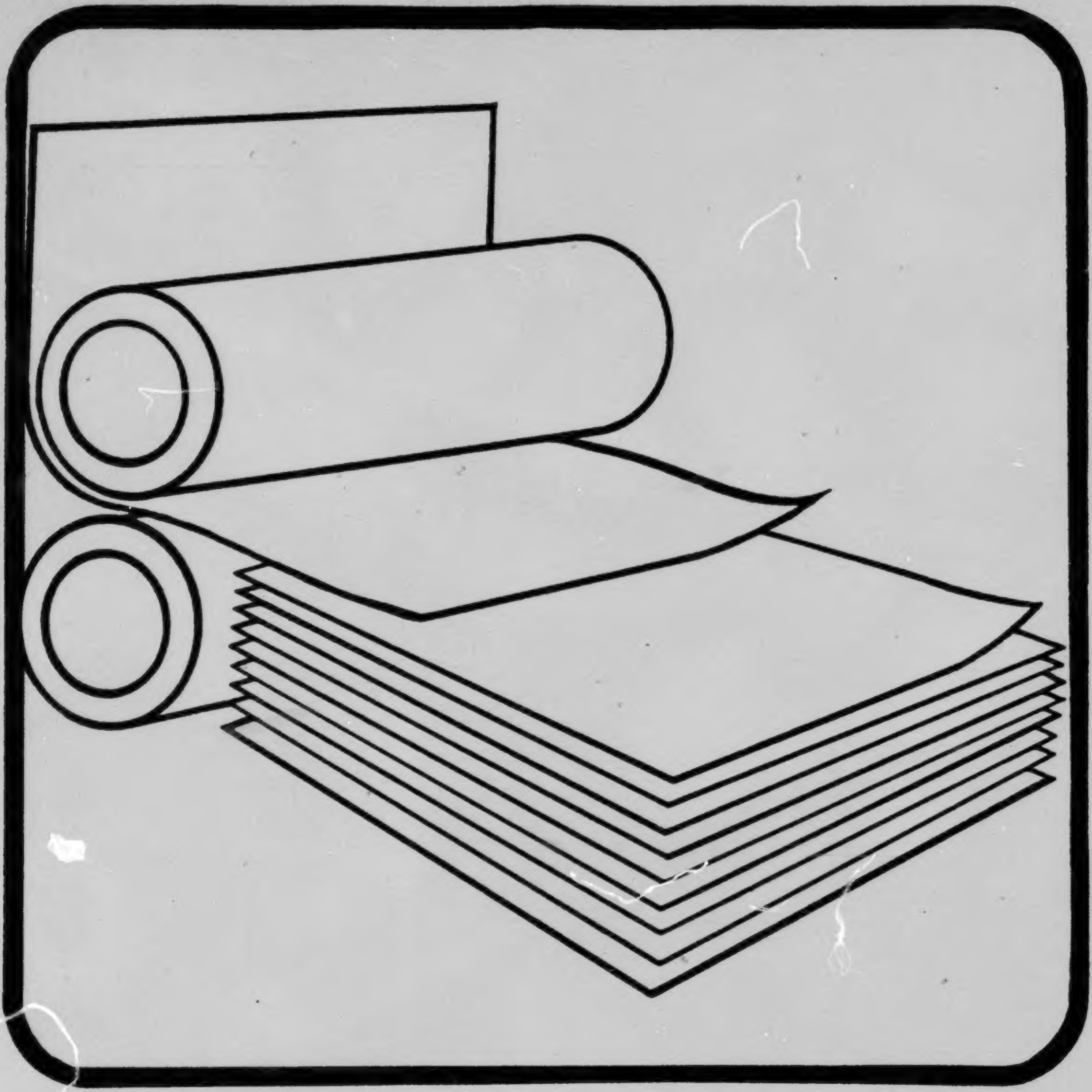
7. WHAT IS USED TO DEVELOP DYLUX PROOF PAPER?

   A. DEVELOPER C. WATER
   B. FIXER D. UV LIGHT

8. THE ORANGE D.F.F. SHEET WILL ALLOW________________LIGHT THROUGH IT.

   A. UV LIGHT C. UV, SILVERPRINT
   B. WHITE, DYLUX D. WHITE, SILVERPRINT

9. IN YOUR OPINION, WHICH OF THE 2 PROOF SYSTEMS IS BETTER, AND WHY (GIVE SEVERAL REASONS).



graphics

unit: PLATEMAKING AND PROOFING

capital area career center

1401 12 007

module: 1401 12 007 3 **date:** DECEMBER 1977 **level:**

skill title: PROOFING: EXPOSURE AND PROCESSING OF 3M COLOR-KEY

developed & written by: GLEN PETTIT

visuals by: BRUCE BENNETT

PERFORMANCE OBJECTIVE

YOU ARE GOING TO LEARN:

HOW TO EXPOSE, TRANSPORT, DEVELOP AND REGISTER 3M COLOR-KEY AS A PROOFING MATERIAL.

IN ORDER TO DO THIS YOU WILL NEED:

A NEGATIVE MASKED FOR A SIMPLE BREAK FOR TWO OR MORE COLORS
COLOR KEY
PLATEMAKER
BLACK PAPER
YELLOW SAFE-LIGHTS
COTTON PAD
TRIMMER
STRIPPED FLATS
DEVELOPING BLOCK

WE WILL KNOW YOU CAN DO IT WHEN:

1. YOU HAVE A PERFECT SET OF COLOR-KEY PROOFS SHOWING JUST WHAT IMAGE WILL PRINT IN EACH COLOR.
2. THE PROOFS ARE CLEAR, FLAT, CLEAN, EXACTLY REGISTERED AND NEATLY DISPLAYED.

A TAPE OF THIS MODULE IS AVAILABLE.

INFORMATION

A CUSTOMER OFTEN WANTS TO SEE WHAT HIS JOB WILL LOOK LIKE IN COLOR ON THE MATERIAL BEING PRINTED, AND HE/SHE WANTS IT TO BE MORE EXACT THAN THE FIRST FINAL LAYOUT. WE CAN GIVE HIM/HER PROOF IN THE COMMON PROCESS COLORS BY USING THE 3M COLOR-KEY PROOFING MATERIAL. 3M COLOR-KEY IS A LIGHT-SENSITIVE, POLYESTER-BASE FILM WHICH COMES IN MANY COLORS AS A POSITIVE OR NEGATIVE ACTING PROOF. AFTER EXPOSURE AND PROCESSING, AN ACTUAL COLOR TRANSPARENCY IS MADE. THIS CAN BE DISPLAYED ON THE ACTUAL STOCK TO BE PRINTED FOR THE CUSTOMER.

COLOR-KEY IS SENSITIVE TO ULTRAVIOLET LIGHT AND FLOURESCENT LIGHT WILL EXPOSE IT IF IT IS LEFT OUT FOR A MINUTE OR TWO. IT IS BEST TO WORK UNDER LOW LIGHT OR YELLOW LIGHTS. STORE COLOR-KEY IN A COOL PLACE TO MAKE ITS LIFE LONGER. REFRIGERATION WILL KEEP IT GOOD FOR YEARS LONGER.

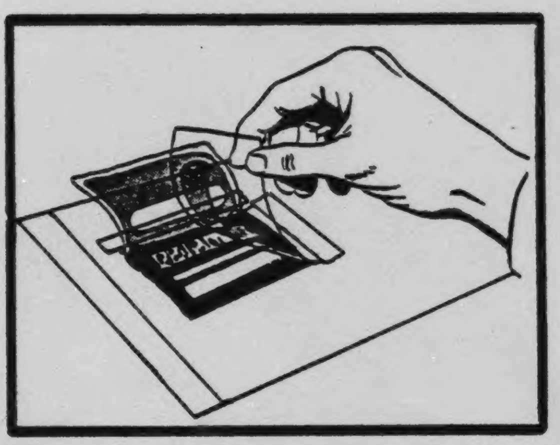
THIS MATERIAL MAY BE CUT JUST LIKE FILM, KEEPING THE EMULSION UP SO IT WON'T GET SCRATCHED. IT IS THIN, SO USE SHARP INSTRUMENTS. DO NOT USE ON A LIGHT TABLE IF THE LIGHTS ARE ON. THE EMULSION SIDE IS SOFT, SCRATCHES EASILY, IS A LITTLE DULL AND STICKS TO A WET FINGER. THE SHEETS OF COLOR-KEY HAVE NOTCHES ON THE RIGHT END OF THE TOP SIDE TO SHOW THE EMULSION SIDE IS FACING YOU (ALL BETTER QUALITY FILMS HAVE NOTCHES IN THIS POSITION TO SHOW EMULSION SIDE, THE SIZE AND NUMBER OF NOTCHES SHOW DIFFERENT FILMS BUT THEY ARE ALWAYS ON THE TOP-RIGHT WHEN THE EMULSION FACES YOU).

3M BRAND NEGATIVE TRANSPARENT COLOR-KEY IS THE ONLY PRODUCT WE CAN GET FOR THIS TYPE OF PROOFING. 3M ALSO MAKES A SIMILAR PRODUCT CALLED "TRANSFER-KEY" WHICH WILL PERMANENTLY GIVE A SINGLE-SHEET PROOF (ALL 4 COLORS ARE LAID ON TOP OF ONE ANOTHER ON A WHITE PLASTIC BASE) AND IS DONE LIKE TO COLOR-KEY. COLOR-KEY COMES IN 10 COLORS; SMALLER SHEETS COME 25/BOX, LARGER SHEETS ARE 15/BOX. A 10" X 12" SHEET COSTS ABOUT $1.00; A 20" X 24" SHEET IS $3.50.

IT IS POSSIBLE TO TYPE OR DRAW COPY ON THIN PAPER WITH OPAQUE INK, THEN USE THIS COPY TO BLOCK OUT THE IMAGE AREA IN EXPOSURE TO PRODUCE A COLOR-KEY "NEGATIVE". THIS COLOR-KEY NEGATIVE MAY BE STRIPPED-UP AND USED TO MAKE A PLATE. ORANGE COLOR-KEY MUST BE USED FOR MAKING THESE "NEGATIVES-WITHOUT-A-DARKROOM". THE ORANGE BLOCKS OUT THE ACTINIC LIGHT (SAME AS MASKING SHEET) THAT EXPOSES THE PLATE.

JOB STEPS

1. TAKE ALL EQUIPMENT TO YOUR WORK AREA.

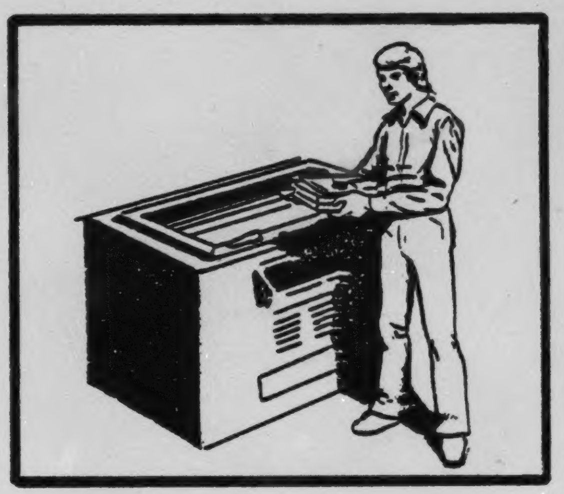


2. GET THE COMPLETED FLATS FROM STRIPPING MOD 1401 11 007 AND LOOK THEM OVER WITH CARE (THE 'BREAK FOR COLOR USING RUBYLITH' MAY HAVE ONLY ONE FLAT WITH 'HINGES'). CHECK TO SEE IF THEY ARE "BROKEN" (COLORS SEPARATED LIKE YOU WANT THEM), OPAQUED, ETC.

NOTE: BOTH REGISTER MARKS MUST SHOW FOR EVERY EXPOSURE SO THE COLORS CAN BE EASILY REGISTERED.

3. CHECK YOUR PLATEBURNER AND SINK TO SEE IF THEY ARE CLEAN AND WORKING.

4. NOW GET YOUR MATERIALS:



A. TAKE OUT THE COLOR-KEY BOXES FROM THE PLATE STORAGE CABINET (TOP DRAWER, BETWEEN PLATEBURNER AND SINK).

B. GET A SHEET OF BLACK CONSTRUCTION PAPER (ABOUT 8½" X 11" OR LARGER) FROM FLAT STORAGE CABINET #1.

C. WASH THE RUBBER DEVELOPING BLOCK AND WET A SPONGE.

D. SHAKE THE PLASTIC BOTTLE OF NEGATIVE COLOR-KEY DEVELOPER (MAKING SURE THE CAP IS SCREWED ON BEFORE SHAKING).

E. GET A CLEAN COTTON PAD READY.

5. TAKE A PIECE OF COLOR-KEY FROM THE BOX (BOXES ARE BLACK, MAGENTA (RED), CYAN (BLUE) AND YELLOW) OF THE COLOR YOU WANT. THERE SHOULD BE A FOLDER WITH CUT PIECES IN IT, USUALLY PIECES 2½" X 4" OR 4" X 5". FOR THIS MOD USE A PIECE 2½" X 4".

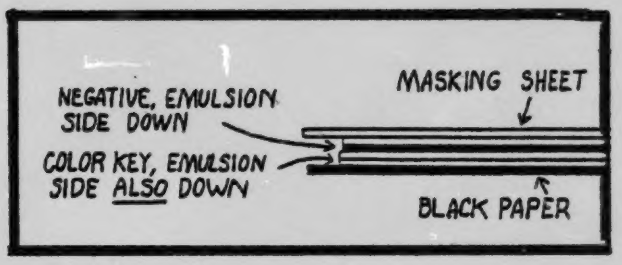
JOB STEPS

NOTE: COLOR-KEY MUST BE USED UNDER LOW LIGHT OR UNDER THE YELLOW SAFE LIGHTS. USE ONLY ENOUGH COLOR-KEY TO COVER THE IMAGE AREA. REMEMBER THE COLOR-KEY IS SAFE FOR ABOUT 3 MINUTES.

6. TO EXPOSE COLOR-KEY ("C-K"):

A. PLACE THE C-K, COATED SIDE (EMULSION) DOWN, ON THE BLACK PAPER IN THE CENTER OF THE PLATEBURNER.

B. PLACE THE FLAT ON THE C-K SO THE EMULSION SIDE OF THE "SANDWICH" SHOULD LOOK LIKE THE DRAWING TO THE RIGHT.


MASKING SHEET
NEGATIVE, EMULSION SIDE DOWN
COLOR KEY, EMULSION SIDE ALSO DOWN
BLACK PAPER

NOTE: THE LIGHT WILL GO THROUGH THE NEGATIVE (RIGHT READING), THROUGH THE C-K, EXPOSING THE EMULSION OF THE C-K LAST. ANY EXTRA LIGHT WILL BE TAKEN INTO THE BLACK CONSTRUCTION PAPER.

C. CLOSE THE GLASS TOP AND TURN VACUUM PUMP ON TO #25, FLIP FRAME OVER AND EXPOSE ONE MINUTE.

7. AFTER EXPOSURE, REMOVE THE C-K AND PLACE IT ON THE GLASS IN THE PLATE SINK (A FEW DROPS OF WATER ON THE GLASS WILL KEEP THE C-K FROM MOVING AROUND TOO MUCH), WITH THE EMULSION UP.

8. PLACE THE COTTON PAD ON THE RUBBER DEVELOPING BLOCK SO THE BOTTOM SIDE IS FLAT AND POUR SOME NEGATIVE ACTING, COLOR-KEY DEVELOPER ON THE C-K (ABOUT EQUAL TO 1/4 THE TOTAL C-K SIZE) AND THEN QUICKLY SPREAD THIS OVER THE ENTIRE C-K.

JOB STEPS

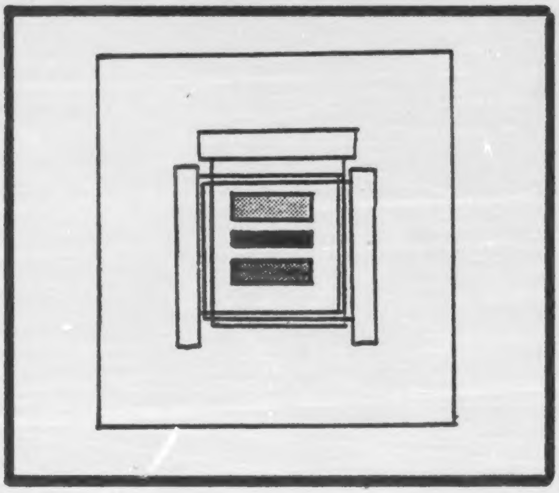
NOTE: THE OBJECT IS TO COVER THE C-K EVENLY, GENTLY WIPING IN 4 TO 6" CIRCLES UNTIL ALL OF THE UNWANTED IMAGE IS REMOVED. IF NO IMAGE IS REMOVED AFTER A MINUTE OF PROCESSING, YOU MAY HAVE THE BASE SIDE UP RATHER THAN THE SOFT EMULSION. IF THE C-K IS COMPLETELY REMOVED IN PROCESSING SO NO IMAGE REMAINS, IT IS PROBABLY BECAUSE THE C-K WAS EXPOSED THROUGH THE EMULSION FIRST RATHER THAN THROUGH THE BASE SIDE, OR ELSE YOU FORGOT THE BLACK PAPER.

9. AFTER DEVELOPING, GENTLY WASH THE C-K WITH WATER AT ABOUT ROOM TEMPERATURE (ABOUT 70°).

10. USING A SPONGE OR YOUR FINGERS, WASH BOTH SIDES TO REMOVE ALL TRACES OF THE DEVELOPER (WHICH WILL TURN THE PLASTIC YELLOW IF LEFT ON THE C-K).

11. USE A SQUEEGEE TO REMOVE EXTRA WATER, MAKING SURE TO PRE-WET THE RUBBER BLADE. BE VERY CAREFUL WHEN YOU SQUEEGEE THE EMULSION SIDE OF THE C-K, AS IT IS VERY SOFT WHEN WET. WARM AIR WILL FINISH DRYING THE C-K IN A MINUTE OR TWO BUT, IF AIR IS TOO HOT, IT WILL WRINKLE THE C-K.

JOB STEPS



12. TAKE THE TWO OR THREE C-K PROOF SHEETS AND MOUNT THESE, CENTERED, ON AN 8½" X 11" SHEET. TRY TO HINGE THE C-K PROOFS ON DIFFERENT SIDES LIKE THE WAY YOU MADE THE RUBYLITH HINGES FOR THE FLAT FOR THIS PROJECT.

13. CLEAN UP YOUR AREA.

A. PUT THE C-K BOXES AWAY.

B. THROW OUT THE COTTON PAD (USE THE SAME PAD FOR ALL YOUR C-K).

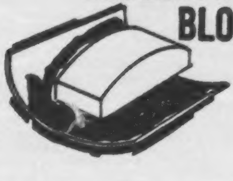
C. WASH OFF THE TOOLS WHICH MAY HAVE ANY DEVELOPER ON IT.

PROCESSING COLOR-KEY

1 PLACE EXPOSED SHEET ON LEVEL GLASS

Glass Should Feel Slightly Cool—
Never Cold or Warm

2 WRAP COTTON PAD AROUND SPECIAL "C-K" DEVELOPING BLOCK

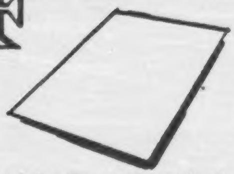


3 POUR DEVELOPER SMOOTHLY

Spread

with Light
Sweeping
Motion

4 BEGIN DEVELOPMENT

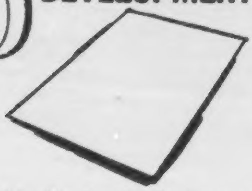


Use Light Sweeping Motion to
Remove Background Coating

5

TURN FRESH SIDE
OF PAD OUT

6 FINISH DEVELOPMENT



Use Moderate Pressure
and Tight Circular Motion

~~7 BL POSITIVE "CO KEY" NOW~~

- ~~Sque Backsi ncoated) of ck, Magenta Cyan~~
- ~~R Fresh Pad on B~~
- ~~Bleach on Coated~~
- ~~stribute Lightly for 20 onds~~

~~YELLOW IS NOT BLEACH~~
~~UNTIL AFTER POST EXPOS~~

8 RINSE IMAGE SIDE

SQUEEGEE BACKSIDE

9 BLOT DRY

Use Newsprint or
Other Absorbent Paper

10 POST EXPOSE POSITIVE "C-K"

Duplicate Original Exposure

EXPOSURE ■ Prevent halation from reflection by placing "C-K" on goldenrod paper.
■ Check for good contact as indicated by "Newton Rings."
■ Expose with the uncoated "C-K" surface facing the light source.
■ Expose Positive "C-K" to an open step 2-3
■ Expose Negative "C-K" to a solid step 4.
■ Accurate dot size indicates correct exposure.

PROCESSING ■ Only specified developers, developing block and pads should be used. (The Webril" "Proof-Pad" manufactured by the Kendall Company is best. "Webril" Reg. T.M. of the Kendall Company.)
■ Avoid water dilution or use of exhausted developer
■ Use adequate developer and keep cap on bottle when not in use.
■ Don't splash developer
■ Keep developing pad flat at all times.
■ Warm sink or chemicals produce tender image
■ Cold sink or chemicals cause difficult development
■ Always squeegee and wipe sheet dry from the backside

INSPECTION ■ Dot sharpening indicates possible overexposure of Positive "C-K" and underexposure of Negative "C-K
■ Dot enlargement indicates possible underexposure of Positive "C-K" and overexposure of Negative "C-K"

FOR BEST VIEWING ■ Mount coated side down on heavy white fluorescent paper. (Such as this chart.) Sequence is yellow, magenta, cyan, black.
■ Staple or tape at top edge only.
■ Frame proof with light gray border, or trim to exact size for maximum effectiveness.

graphics

unit: PLATEMAKING

capital area career center

module: 1401 12 008
1401 12 008 3 date: FEBRUARY 1977 level: II

skill title: MAKING A DIRECT IMAGE PAPER MASTER

developed & written by: DWIGHT SMITH AND GLEN PETTIT

visuals by: LAURA EIBACH

WORD GUIDE

NON-PRODUCING - WILL NOT PRINT ON AN OFFSET PRESS.

TO IMAGE - TO MAKE VISIBLE, TO PRINT FROM.

ETCH - THE ETCH REMOVES THE THIN WAX COATING ON THE MASTER AND GETS IT READY TO PRINT.

PERFORMANCE OBJECTIVE

YOU ARE GOING TO LEARN:

HOW TO MAKE A DIRECT IMAGE PAPER MASTER.

AND IN ORDER TO DO THIS YOU WILL NEED:

DIRECT IMAGE PAPER MASTER
IMAGING MATERIALS (PENCILS, MARKERS, ETC.)
SPECIAL "NON-PRODUCING" PENCIL
TYPEWRITER WITH CARBON RIBBON
TYPEWRITER WITH FABRIC RIBBON
PLATE CLEANER-CONDITIONER
PAPER PLATE GUM

WE WILL KNOW YOU CAN DO IT WHEN:

1. YOU PUT IMAGES ON A PAPER MASTER WITH AT LEAST 5 DIFFERENT MATERIALS.
2. YOU ETCH, PRE-MOISTEN AND PRESERVE THE PAPER MASTER DURING DUPLICATION.
3. YOU EVALUATE THE POSITION AND QUALITY OF THE IMAGE AFTER IT IS PRINTED.
4. YOU SELECT THE BEST MATERIALS TO IMAGE (PRINT FROM).

A TAPE OF THIS MODULE IS AVAILABLE.

WORD GUIDE

NON-UNIFORM - DISSIMILAR, NOT ALIKE.

INFORMATION

A DIRECT IMAGE PAPER MASTER IS SIMPLY A SHEET OF PAPER THAT HAS A SPECIAL COATING. MOST SMALL PRINT SHOPS AND DUPLICATING DEPARTMENTS WILL RUN DIRECT IMAGE PAPER MASTERS. MANY DUPLICATING DEPARTMENTS WILL RUN ONLY THESE MASTERS BECAUSE THEY ARE CHEAP AND EASY TO PRODUCE.

PREPARATION

YOU CAN PREPARE A PLATE IN MUCH THE SAME MANNER AS TYPING A LETTER. JUST AS YOU WOULD AVOID TOUCHING TYPING IN THE BODY OR IMAGE AREA, HANDLE PLATES ON THE TOP OR SIDE MARGINS. ALWAYS ADJUST PAPER GUIDE ROLLERS SO THEY TRAVEL OUTSIDE THE IMAGE AREA.

PRESSURE SETTINGS AND RIBBONS

HIGH PRESSURE SETTINGS (#5 OR E) CAN CAUSE EMBOSSING WHICH IN TURN PRODUCES HOLLOW CHARACTERS ON FINISHED COPY. LOW PRESSURE SETTINGS (#1 OR A) CAN CAUSE INCOMPLETE OR NON-UNIFORM CHARACTERS. ON A MANUAL TYPEWRITER, YOU DO NOT NEED TO USE MORE THAN NORMAL TOUCH. YOU CAN GET BEST RESULTS BY USING INKED RIBBONS MADE OF SILK GAUZE, NYLON AND COTTON FABRICS. FOR MACHINES WITH CARBON RIBBON SPOOLS OR ATTACHMENTS, USE A NEW RIBBON.

ON THE EMULSION SIDE OF THE MASTER (THE LIGHT GREEN SIDE ON WHICH YOU TYPE), THERE ARE GUIDE AND MARGIN LINES PRINTED IN LIGHT-COLORED INK. THESE LINES WILL NOT PRINT, BUT WILL HELP YOU GET POSITION WHEN TYPING.

CORRECTIONS

CORRECTIONS ON DIRECT-IMAGE PAPER PLATES ARE EASIER TO MAKE THAN THOSE ON BOND PAPER. USE A SOFT ERASER TO LIFT OFF THE INCORRECT IMAGE. THEN, CLEAN ERASER TIP AND LIGHTLY RUB AROUND CORRECTED AREA UNTIL YOU CAN BARELY SEE THE ORIGINAL IMAGE. THEN, RE-TYPE NEW IMAGE OVER THAT AREA.

DIRECT-IMAGE PAPER PLATES ARE READY RIGHT AWAY FOR DUPLICATING OR YOU CAN STORE THEM BEFORE USING THEM.

WORD GUIDE

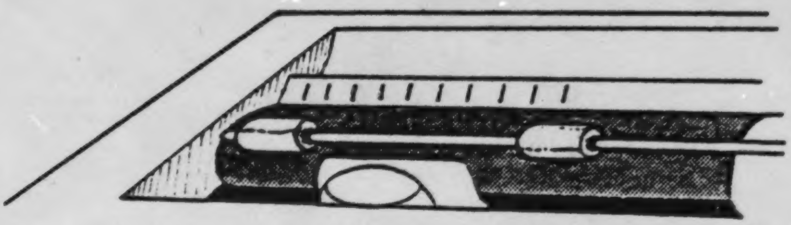
KNURL - A SMALL KNOB OR RIDGE ON METAL.

INFORMATION

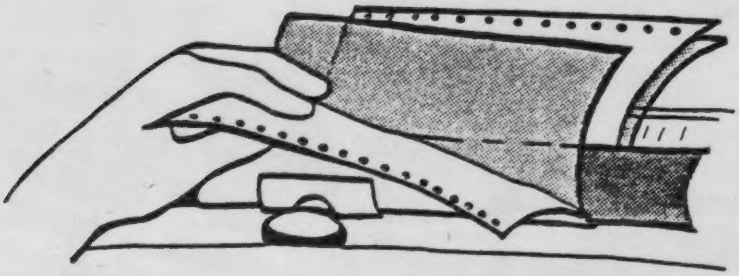
TIPS FOR THE TYPIST

1. TO GET THE BEST PRESSURE SETTINGS, TYPE ONE LINE OF LOWER-CASE AND ONE LINE OF UPPER-CASE AT ALL THE PRESSURE SETTINGS ON YOUR MACHINE. HAVE YOUR DUPLICATOR OPERATOR RUN OFF 50-100 COPIES. CHECK THE RESULTS FOR SHARPNESS AND CLARITY AND THEN CHOOSE THE PRESSURE SETTING OF THE LINE OR LINES THAT CAME OUT BEST. USE THIS SETTING FOR TYPING OFFSET PLATES.

2. IF THE TWO RUBBER GUIDE ROLLERS ON THE TYPEWRITER ARE "TRACKING" OR STICKING, WRAP THEM IN SCOTCH TAPE.



3. IF YOUR PLATEN IS "POCK-MARKED" OR KNURLED, TRY A PLASTIC BACKING SHEET.



WORD GUIDE

EMBOSSING - RAISING FROM THE SURFACE.

INFORMATION

TIPS FOR THE TYPIST

4. MANY PEOPLE LIKE TO USE LOTIONS AND CREAMS FOR THEIR HANDS. IF YOU USE THEM, HOLD ALL PLATES BY THE EDGES BECAUSE LOTIONS LEAVE INVISIBLE STAINS WHICH WILL CATCH INK.

5. YOU CAN MAKE PERFECT CORRECTIONS ON PLATES IF YOU USE A CLEAN ERASER. A CLEAN ERASER MAKES A CLEAN CORRECTION.

6. WHEN TYPING PLATES, BE SURE YOU USE AN OFFSET RIBBON. OFFSET RIBBONS GIVE SHARP COPY, EXCELLENT CORRECTIONS AND LONGER RUNS. MOST CARBON RIBBONS WORK WELL WHILE SILK OR FABRIC RIBBONS WILL BREAK DOWN ON LONG PRESS RUNS.

7. TRY TO AVOID EMBOSSING. HARD-STRIKE IMAGES CAUSE BROAD CHARACTERS, POOR CORRECTIONS AND SHORT RUNS.

8. KEEP TYPE-BARS AND PLATES CLEAN AND FREE FROM INK, LINT AND DIRT.

ABOUT DIRECT IMAGE PLATES

MOST DIRECT IMAGE PAPER PLATES ARE ONE OF THREE KINDS: SHORT RUN (UP TO 500 IMPRESSIONS), MEDIUM RUN (1000 IMPRESSIONS), AND LONG RUN (2000 - 5000 IMPRESSIONS). THE PRESS MUST BE SET UP WITH PERFECT PRESSURES TO KEEP GOOD QUALITY FOR THE ENTIRE RUN. IT IS WISE TO USE A SLIGHTLY BETTER GRADE THAN YOU NEED.

FOR A SMALL PRESS, 10" X 15" PLATES WILL COST AS FOLLOWS: SHORT RUN: $9.00 PER 100, MEDIUM RUN: $14.00 PER 100, AND LONG RUN: $21.00 PER 100. REPRODUCING PENCILS ARE 20¢ EACH AND NON-REPRODUCING PENCILS ARE 35¢ EACH (1970 COSTS).

IF YOU WANT TO DRAW NON-REPRODUCING GUIDE LINES, USE A SPECIAL NON-REPRODUCING PENCIL. THIS WILL DISSOLVE OFF WHEN THE PLATE IS ETCHED. THE REPRODUCING PENCIL WILL PRINT SHARP AND BLACK.

OIL AND WATER DON'T MIX. THAT'S THE PRINCIPLE OF OFFSET PRINTING. MOST MARKERS ARE MADE WITH SOME OIL BASE SO THEY WILL REPRODUCE AND SOME ARE BETTER THAN OTHERS. REMEMBER: EVEN YOUR FINGERPRINT HAS OIL.

PLATE PREPARATION

DIRECT-IMAGE PAPER PLATES SHOULD BE ETCHED OR PRE-MOISTENED BEFORE YOU ATTACH THEM TO THE PLATE CYLINDER. USE A HALF-SIZE DAMP COTTON PAD AND PAPER PLATE ETCH. BE SURE TO COVER THE ENTIRE PLATE SURFACE TWICE. DO NOT OVER-WET OR "DROWN" THE PLATE IN ETCH.

INFORMATION

RUNNING THE PLATE

START THE DUPLICATOR AND INK ROLLERS. CONTACT THE PLATE AND THEN THE PLATE TO BLANKET RIGHT AWAY. START PAPER FEED. IF DUPLICATOR IS STOPPED BEFORE RUN IS COMPLETE, LIGHTLY COVER THE PLATE WITH A COTTON PAD DAMPENED IN ETCH OR FOUNTAIN SOLUTION. THIS WILL PREVENT TONING (PICKING UP INK SPOTS IN THE BACKGROUND) OR SCUM.

FOUNTAIN SOLUTION

REGULAR FOUNTAIN SOLUTION FOR STANDARD DUPLICATORS SHOULD BE MIXED 1 PART TO 10 PARTS WATER (WHICH IS MORE CONCENTRATED THAN FOR METAL PLATES). THE ACQUAMATIC LEVER-SETTING SHOULD BE POSITIONED BETWEEN 18 AND 25. FOR A SHORT RUN OF 50-100 COPIES, IT IS NOT NECESSARY TO CHANGE THE NORMAL FOUNTAIN SOLUTION (1:15) UNLESS YOU ARE RUNNING MANY MASTERS, ONE AFTER ANOTHER.

TIPS TO DUPLICATOR OPERATOR

1. ETCH PLATES LIGHTLY AND AVOID FLOODING THE PLATES. WIPE THE ETCH ON IN SEVERAL DIRECTIONS FOR COMPLETE COVERAGE.

2. KEEP DAMPENER COVERS CLEAN. CLEAN COVERS MAKE YOUR JOB EASIER AND YOUR WORK BETTER (FOR CHIEF OR MULTILITH PRESSES).

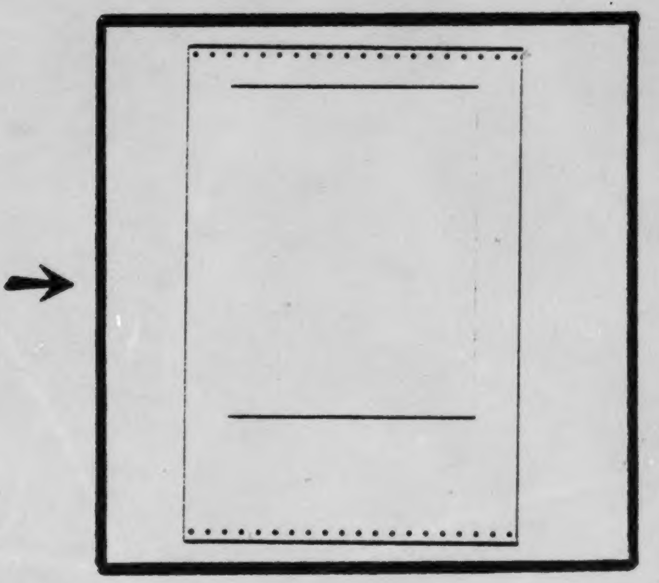
3. SHOULD TONING (INK IN THE BACKGROUND) OCCUR, PLATES CAN SELF-CLEAN MERELY BY BRINGING INK AND FOUNTAIN SOLUTION INTO BALANCE.

4. IF PLATE IS LEFT IDLE FOR MORE THAN HALF A MINUTE, IT WILL BE NECESSARY FOR YOU TO RE-ETCH. THIS TAKES ABOUT 3 SECONDS.

JOB STEPS

1. GET A DIRECT IMAGE PAPER MASTER FROM THE PLATE STORAGE CABINET. BE SURE IT IS CLEAN AND SMOOTH.

2. GET A SPECIAL "NON-REPRODUCING" PENCIL. FIND THE 8 1/2" X 11" AREA OUTLINED IN LIGHT BLUE ON THE MASTER. THEN, DRAW A 7 1/2" X 10" BOX 1/2" INSIDE THE LIGHT BLUE BOX ON THE MASTER.

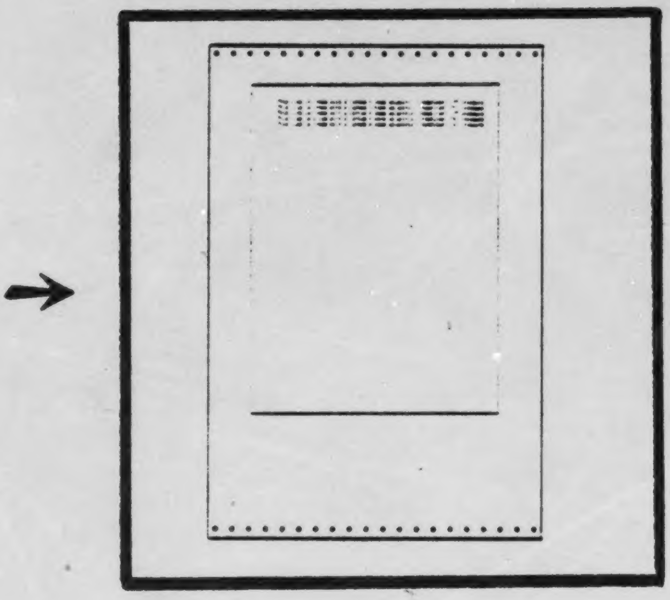


3. WHEN YOU'VE OUTLINED THIS BOX, GO OVER IT WITH A "REPRODUCING" PENCIL SO IT WILL PRINT.

4. GO TO A CARBON-RIBBON TYPEWRITER. ASK YOUR INSTRUCTOR WHICH TYPEWRITER TO USE AND HOW TO SET THE PRESSURE TO THE LOWEST SETTING. NOTICE THE THIN FILM OF PLASTIC; THAT IS THE RIBBON. PUT THE PAPER MASTER IN THE TYPEWRITER.

5. TYPE A LINE ACROSS THE BOX YOU DREW IN JOB STEP 3. INCREASE THE PRESSURE SETTING BY ONE.

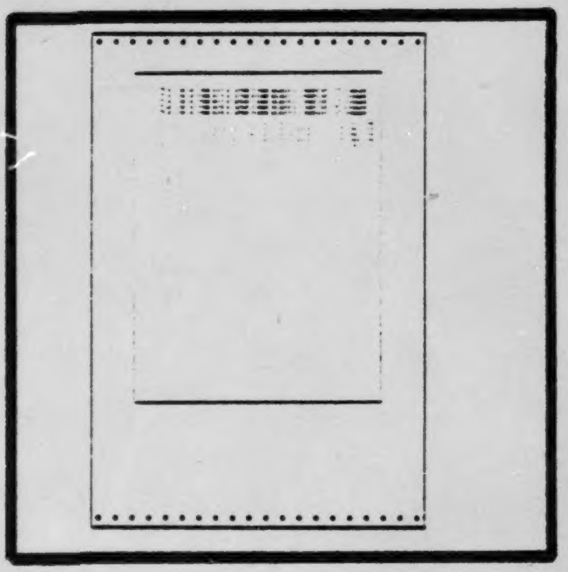
6. REPEAT JOB STEP 5 UNTIL YOU HAVE USED ALL THE PRESSURE SETTINGS.



7. GO TO A TYPEWRITER WITH A FABRIC RIBBON. IF NECESSARY, ASK YOUR INSTRUCTOR WHICH TYPEWRITER TO USE AND HOW TO CHANGE THE PRESSURE. SET THE PRESSURE TO THE LOWEST SETTING.

JOB STEPS

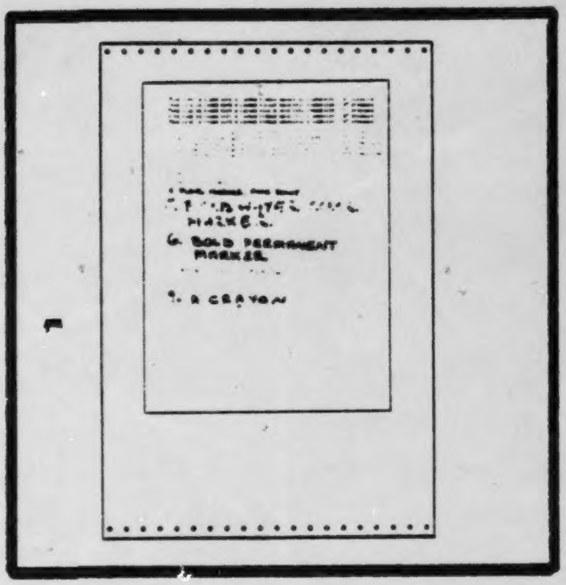
8. REPEAT JOB STEPS 5 AND 6.



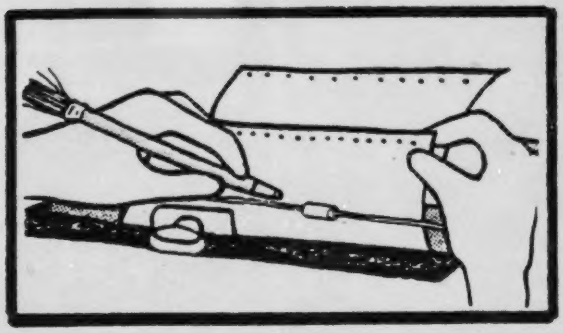
9. USE AS MANY OF THE FOLLOWING MATERIALS AS YOU CAN FIND. ASK YOUR INSTRUCTOR TO HELP YOU GET ANY YOU CAN'T FIND.

   A. RED PENCIL
   B. REGULAR PENCIL
   C. BALL POINT PEN
   D. FLAIR FELT TIP
   E. BOLD WATERCOLOR
   F. BOLD PERMANENT MARKER
   G. REPRODUCING PENCIL
   H. NON-REPRODUCING PENCIL
   I. A CRAYON
   J. SWEAT FROM YOUR FOREHEAD

   WRITE AT LEAST THE NAME OF THE MATERIAL ON THE MASTER (EXCEPT FOR J.)



10. GO BACK TO A TYPEWRITER AND ON THE MASTER, TYPE YOUR NAME AND THE DATE. ERASE PART OF THE DATE AND THEN, TYPE IT ON INCORRECTLY. THEN, TYPE THE DATE CORRECTLY UNDER THE FIRST ONE.



WORD GUIDE

ETCH - THE ETCH REMOVES THE THIN WAX COATING ON THE MASTER AND GETS IT READY TO PRINT.

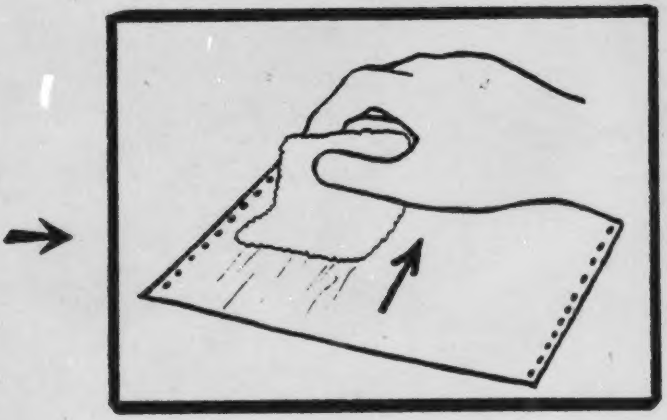
JOB STEPS

11. TAKE THIS PRACTICE PAPER MASTER TO THE PRESS AREA. FIND OUT WHEN YOU CAN HAVE IT RUN. UNLESS YOU'VE COMPLETED THE MODS ON THE A.B. DICK OFFSET PRESS, DO NOT RUN THE PRESS YOURSELF. HAVE 100 COPIES RUN ON THE PRE-PRINTED SCRAP PAPER.

12. WHEN THE PRESS OPERATOR IS READY, HELP HIM/HER ETCH THE PLATE. USE THE PAPER MASTER ETCH FOR THE TYPE OF PAPER MASTER YOU ARE USING. ASK YOUR INSTRUCTOR TO CHECK WHICH ETCH YOU SHOULD USE.

13. OPEN THE BOTTLE AND PUT A COTTON PAD, FOLDED IN HALF, OVER THE OPENING. HOLDING IT TIGHTLY, TIP THE BOTTLE UNTIL THE PAD IS MOIST.

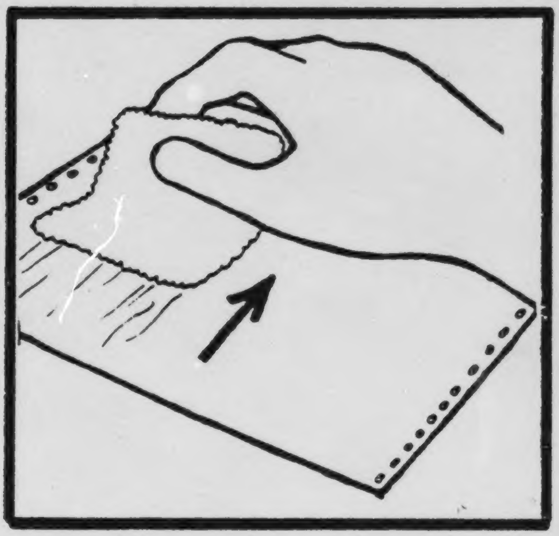
14. WIPE THE PAPER MASTER WITH THE MOIST SIDE OF THE COTTON PAD. WIPING IN ONE DIRECTION, DO THE EDGES FIRST, THEN THE WHOLE PLATE.



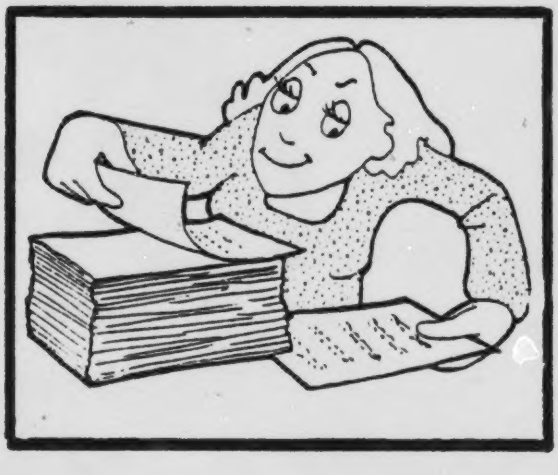
JOB STEPS

15. REPEAT JOB STEP 13. ETCH THE ENTIRE PAPER MASTER IN A DIRECTION DIFFERENT FROM THAT IN JOB STEP 14. CHECK THE PAPER MASTER. IT SHOULD BE MOIST BUT NOT DRIPPING. →

16. WHEN THE PRESS OPERATOR HAS RUN YOUR COPIES, TAKE THE PAPER MASTER OFF THE PRESS AND CLEAN IT WITH PLATE CLEANER-CONDITIONER. THEN, GUM IT WITH A PAPER PLATE GUM TO PRESERVE IT. IF YOU AREN'T SURE HOW TO USE THE CHEMICALS, ASK YOUR INSTRUCTOR. →



17. COMPARE ONE OF THE FIRST AND ONE OF THE LAST PRINTED COPIES OF THE MASTER. →



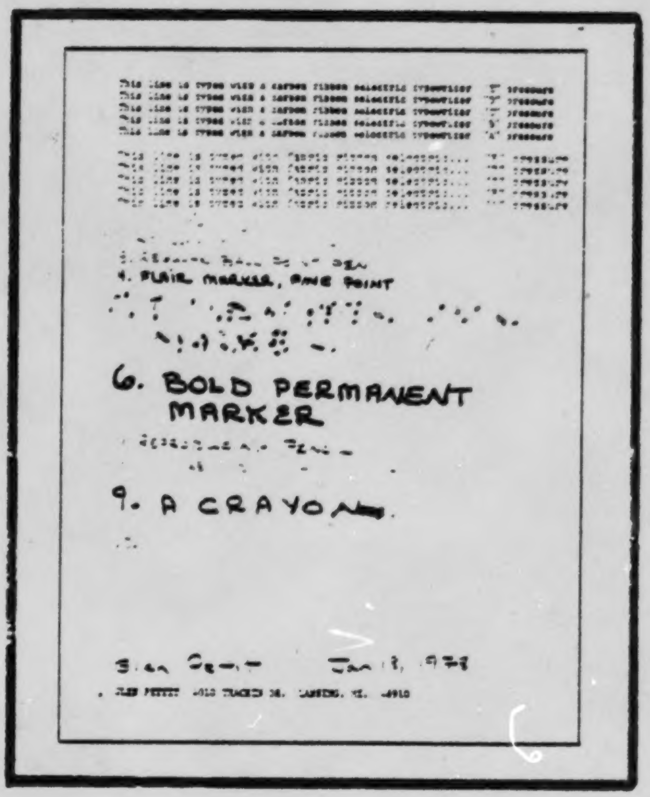
JOB STEPS

A. NOTE WHICH MATERIAL MADE THE BEST IMAGE.

B. NOTE WHICH TYPEWRITER RIBBON AND WHICH PRESSURE SETTING WORK BEST.

C. NOTE WHICH IMAGE MATERIAL LASTED BEST THROUGH THE PRINTING RUN.

18. TAKE THE QUIZ ON PAGE 12.



4. FLAIR MARKER, FINE POINT

6. BOLD PERMANENT MARKER

9. A CRAYON.

JOB STEPS

CHECK YOURSELF BY ANSWERING THESE QUESTIONS ON A PIECE OF SCRAP PAPER: (TRUE OR FALSE)

A. WATER-BASE MARKERS ARE FINE FOR PAPER MASTERS. T F

B. OIL-BASE MARKERS ARE BEST FOR PAPER MASTERS. T F

C. FABRIC TYPEWRITER RIBBONS ARE FINE FOR TYPING PAPER MASTERS. T F

D. CARBON RIBBONS ARE BEST FOR TYPING PAPER MASTERS. T F

E. YOU CANNOT MAKE TYPING CORRECTIONS ON PAPER MASTERS. T F

F. FINGERPRINTS WON'T SHOW UP ON A PAPER MASTER. T F

G. THE GREATER THE TYPEWRITER PRESSURE YOU APPLY, THE DARKER THE LETTERS WILL BE ON PAPER MASTERS. T F

H. YOU CANNOT MAKE PICTURES OR DRAWINGS ON PAPER MASTERS. T F

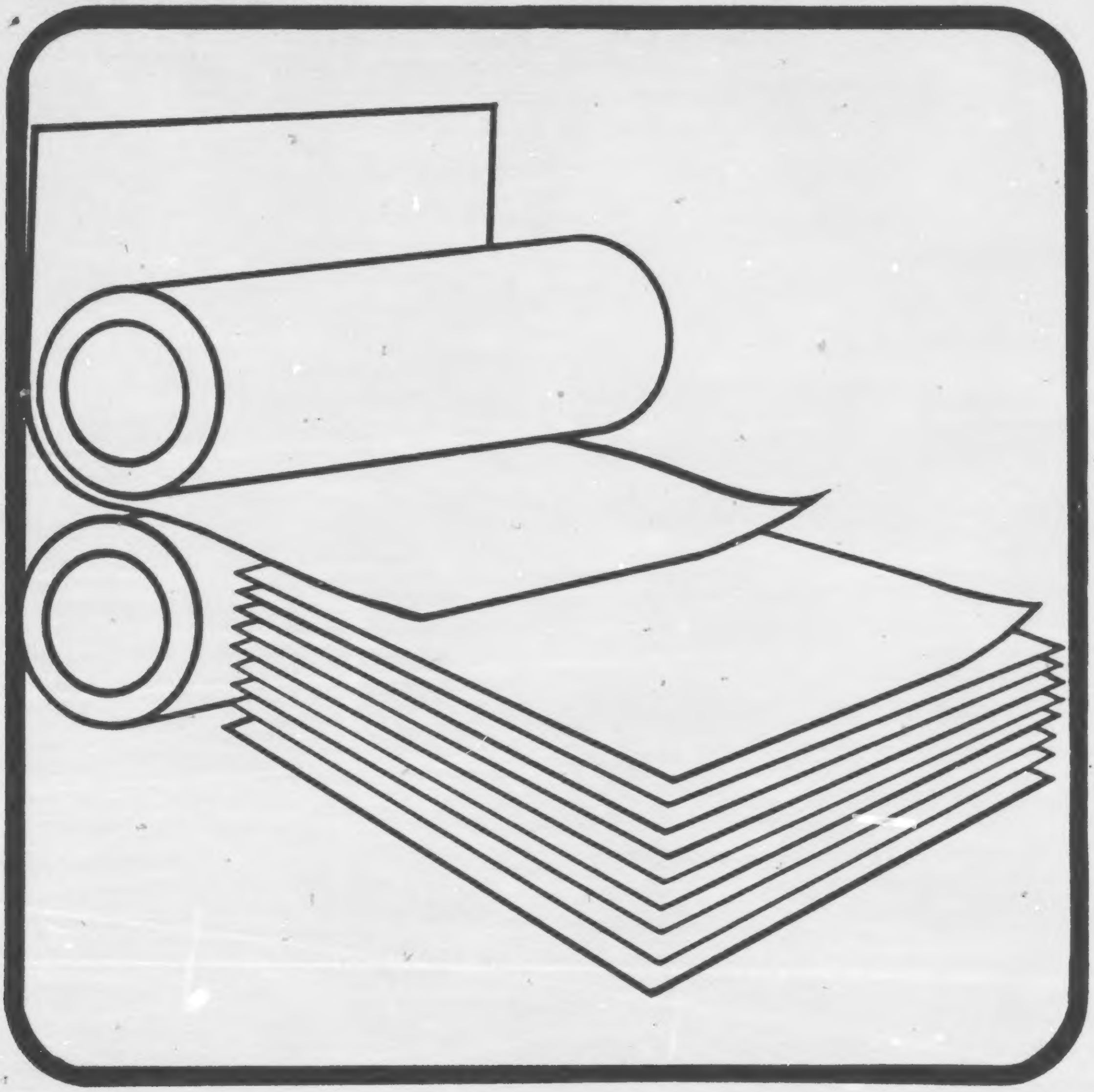
I. IF THE PRESS WASN'T RUNNING, IT WOULD TAKE AT LEAST 5 MINUTES FOR THE MASTER SHEET TO DRY OUT. T F

J. THE "ETCH" REMOVES THE THIN WAX LAYER ON THE MASTER YOU USE TO REDUCE FINGERPRINTS. T F

WHEN YOU FINISH, TAKE THE QUIZ, YOUR MASTER AND THE PRINTED COPIES TO YOUR INSTRUCTOR.

ANSWERS TO QUIZ

A. F F. F
B. T G. F
C. F H. F
D. T I. F
E. F J. T



graphics

unit: PLATEMAKING AND PROOFING

capital area career center

1401 12 009
module: 1401 12 009 3 **date:** NOVEMBER 1977 **level:**

skill title: PRODUCING ELECTROSTATIC MASTERS (#2000 ELECTROSTATIC COPIER)

developed & written by: GLEN PETTIT

visuals by:

PERFORMANCE OBJECTIVE

YOU ARE GOING TO LEARN:

HOW TO PREPARE AND LOAD THE COPIER FOR OPERATION, ADJUST CONTRAST, MAKE MINOR NEEDED ADJUSTMENTS AND MAKE COPIES ON THE ADDRESSOGRAPH-MULTIGRAPH MODEL 2000 COPIER. ADVANCED STUDENTS WILL BE ABLE TO MAINTAIN THE COPIER (MANUAL FEED, HUMIDITY CONTROL, FUSER, ADD TONER, CLEAN BIAS, GLASS AND OPTICS).

IN ORDER TO DO THIS YOU WILL NEED:

AN A-M 2000 ELECTROSTATIC COPIER AND A REQUEST TO MAKE SOME ELECTROSTATIC MASTERS

ELECTROSTATIC COPY PAPER

"A-M 2000 ELECTROSTATIC COPIER" REFERENCE MANUAL

WE WILL KNOW YOU CAN DO IT WHEN:

1. YOU KEEP THE A-M 2000 COPIER IN GOOD CLEAN ORDER AND PRODUCE MASTERS WITH CLEAN BACKGROUNDS, SHARP AND SOLID IMAGES, A STRAIGHT IMAGE AND FREE OF ANY UNNECESSARY TONER OR MIX.
2. YOU CAN DO ANY NEEDED MAINTENANCE QUICKLY AND LOAD IN LESS THAN A MINUTE.
3. YOU CORRECTLY SET UP AND OPERATE THE A-M 2000 COPIER, MAKING AT LEAST 100 MASTERS, INCLUDING RELOADING MASTERS.

A TAPE OF THIS MODULE IS AVAILABLE.

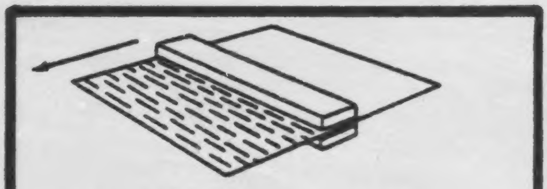
INFORMATION

READ THE REFERENCE MANUAL, "A-M 2000 ELECTROSTATIC COPIER".

ELECTROSTATIC IS A BROAD TERM, VERY SIMPLY IT MEANS ELECTRO (ELECTRICITY) STATIC (TO STAND). AS WE USE IT IN GRAPHICS, IT IS THE SAME AS "XEROGRAPHY" (PRONOUNCED ZEE-ROG-RA-PHY) WHICH MEANS DRY WRITING IN GREEK. THE BASIC OPERATION IS THE SAME AS A ZEROX OR INSTANT COPY MAKER MACHINE WHERE YOU GET A COPY IN FIVE SECONDS FOR TEN CENTS. MOD 1401 15 009 "OPERATING AN ELECTROSTATIC COPIER" WILL EXPLAIN THE BASIC OPERATION OF THIS.

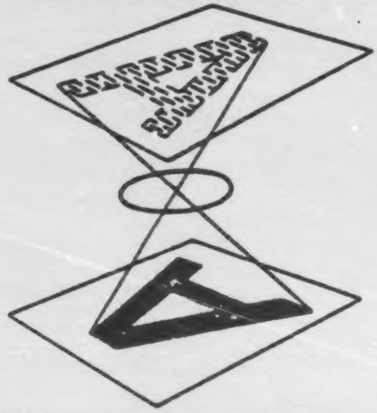
THE PROCESS IN THE A-M 2000 IS IN FOUR STEPS:*

1. CHARGING - AN ELECTROSTATIC CHARGE IS PLACED ON THE COPY PAPER AS IT ENTERS THE COPIER.

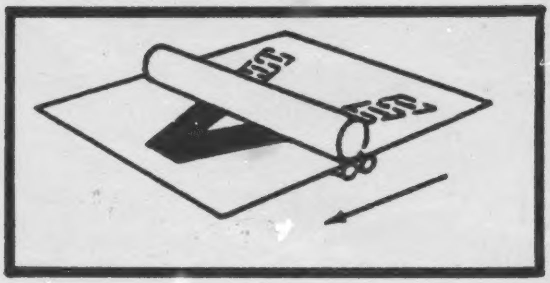


(1) **Charging - on electrostatic charge is placed on the copy paper as it enters the copier**

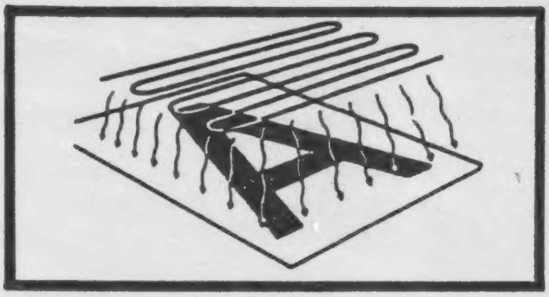
2. EXPOSURE - THE OPTICAL SYSTEM PROJECTS AN IMAGE OF THE ORIGINAL ONTO THE CHARGED PAPER.



INFORMATION



3. **DEVELOPMENT** - DEVELOPER IS APPLIED TO THE EXPOSED SHEET TO FORM AN IMAGE OF THE ORIGINAL.

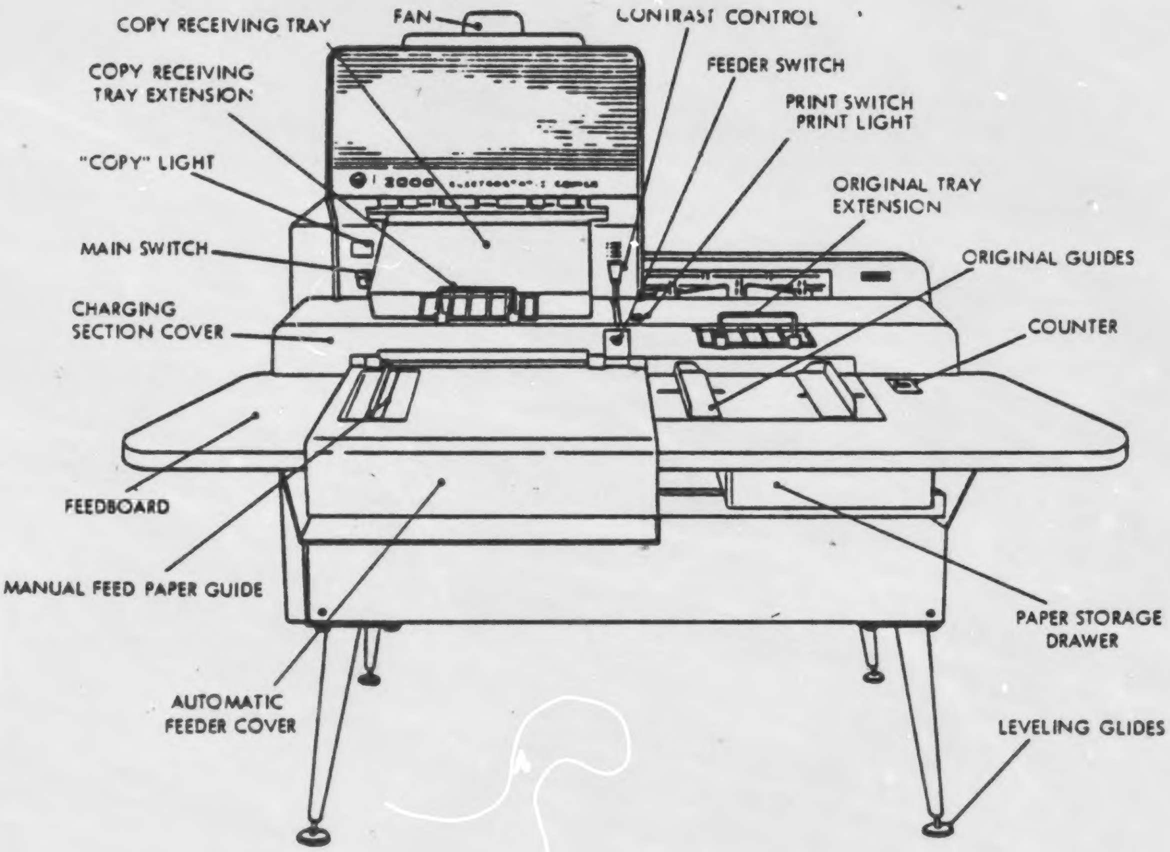


4. **FUSING** - THE IMAGE IS FUSED TO THE PAPER BY HEAT AND DELIVERED READY FOR USE.

*FROM PAGE 1, "A-M 2000 ELECTROSTATIC COPIER" REFERENCE MANUAL, MULTIGRAPH CORPORATION, CLEVELAND, OHIO.

INFORMATION

LOOK AT THE ELECTROSTATIC COPIER (ELECTROSTATIC PLATEMAKER) AND NOTE ALL THE PARTS LISTED BELOW:



NOTE: IT IS NOT NECESSARY TO USE A FULL SIZE MASTER AS YOU DO FOR METAL PLATES. AS LONG AS THE MASTER CAN BE CLAMPED ON THE PRESS AND JUST EXCEED THE PRESS SIZE SHEET, IT WILL BE OK. A SHORT MASTER WILL PRINT AN UNWANTED LINE ALONG THE EDGE OF THE ELECTROSTATIC MASTER.

WHEN NECESSARY, ADVANCED DUPLICATOR OPERATORS AND PRESS OPERATORS WILL ALSO DO THE REGULAR MAINTENANCE, UNDER THE DIRECTION OF THE INSTRUCTOR OR MANAGER.

*DIAGRAM FROM PAGE 4, "A-M 2000 ELECTROSTATIC COPIER" REFERENCE MANUAL, ADDRESSOGRAPH-MULTIGRAPH CORPORATION, CLEVELAND, OHIO.

JOB STEPS

1. TAKE YOUR EQUIPMENT TO THE PRESSROOM.

2. LOOK OVER THE DIAGRAM ON PAGE 4 OF THIS MOD. FIND THE "REFERENCE MANUAL" FOR THE A-M 200 WHICH IS IN THE PAPER STORAGE DRAWER AT THE FRONT OF THE COPIER. READ THE ENTIRE BOOK, THEN REVIEW THE FIRST 10 PAGES OF OPERATION. BE SURE TO RETURN THE BOOK TO THE PROPER DRAWER, (IT IS BEST TO READ THE MANUAL AT THE COPIER).

3. THE COPIER IS NORMALLY SET FOR THE MOST IDEAL CONTRAST. PICK SOME IDEAL COPY (PAGE FROM A MAGAZINE WITH A PICTURE, BOLD TYPE AND TEXT COPY). MAKE A NORMAL MASTER, MAKE A DARK MASTER THEN A LIGHT MASTER (CHANGE 2 NUMBERS EACH WAY). RETURN THE CONTRAST TO NORMAL. MASTERS COST ABOUT 5¢ EACH, PLUS ANOTHER CENT FOR TONER. DON'T WASTE MASTERS, TRY AND WORK WITH SOMEONE IF POSSIBLE.

4. LOOK OVER THE THREE COPIES YOU HAVE JUST MADE AND BE ABLE TO RECOGNIZE QUALITY (DARKER PICKS UP TONER IN BACKGROUND).

5. ASK THE INSTRUCTOR/MANAGER IF THERE ARE ANY MASTERS TO BE MADE. USUALLY, THERE IS A LOT OF PRODUCTION WORK REQUIRING MASTERS TO BE MADE. IF THERE IS NO VOLUME (100 OR MORE MASTERS) AT THE PRESENT TIME, ASK AT A LATER DATE. THE CONTRAST COULD CHANGE WHILE YOU ARE RUNNING MASTERS. BE SURE TO CAREFULLY EXAMINE YOUR MASTERS AS THEY COME OUT. WATCH THE QUALITY ALL THE TIME.

   NOTE: FOR DUPLICATOR OPERATORS AND PRESS OPERATOR OCCUPATIONS: SOMETIME, BEFORE YOU COMPLETE YOUR PROGRAM, FIND OUT HOW TO MAINTAIN THE COPIER. THERE ARE NEARLY 150 COPIERS LIKE THIS IN THE AREA AND AT LEAST THAT MANY SIMILAR MODELS FROM OTHER COMPANIES. IT TAKES ABOUT 15 MINUTES TO LEARN MAINTENANCE, BUT YOU MUST DO IT UNDER DIRECT SUPERVISION OF THE INSTRUCTOR OR MANAGER.

6. PUT AWAY ALL EQUIPMENT.

graphics

unit: PLATEMAKING AND PROOFING

capital area career center

module: 1401 12 010
1401 12 010 3 **date:** DECEMBER 1977 **level:**

skill title: HAND-CUT SCREEN PRINTING PLATES (STENCILS)

developed & written by: GLEN PETTIT

visuals by: MARY ANN GAMEL

WORD GUIDE

ADHERE - TO STICK

TRANSPARENT - SEE THROUGH

PERFORMANCE OBJECTIVE

YOU ARE GOING TO LEARN:

HOW TO HAND CUT A DESIGN IN THIS THIN, TRANSPARENT, LACQUER-LIKE FILM AND ADHERE IT TO A SCREEN FOR PRINTING.

AND IN ORDER TO DO THIS YOU WILL NEED:

A SHEET OF WATER SOLUBLE, HAND-CUT, SCREEN PROCESS FILM TO BE CUT

SWIVEL KNIFE

XACTO KNIFE

SINK AND SPONGE

SCREEN

NEWSPRINT

"ULANOCUT GREEN" FILM

ARTWORK

BLOCKOUT

BRUSH

WE WILL KNOW YOU CAN DO IT WHEN:

1. YOU HAND-CUT A FILM STENCIL THAT IS CLEAN, NEAT, SHARP AND YOU CORRECT IT IF NEEDED.
2. YOU SECURELY ADHERE THIS STENCIL TO THE PRINTING SCREEN SO THAT IT IS FLAT AND WITHOUT WRINKLES OR BUBBLES.
3. YOU MAKE SURE THE SCREEN IS DEGREASED, TIGHTLY STRETCHED BEFORE ADHERING AND COMPLETELY CLEAN WHEN FINISHED PRINTING.
4. THE FINAL PRINTED PIECES ARE IDENTICAL, UNIFORM AND MATCH THE ORIGINAL AS BEST AS POSSIBLE.

A TAPE OF THIS MODULE IS AVAILABLE.

INFORMATION

THE HAND-CUT FILM STENCIL IS A VERY THIN, TRANSPARENT, LACQUER-LIKE FILM ATTACHED TO A THIN PLASTIC BACKING (OR WAX PAPER). THIS TRANSPARENT FILM IS PLACED OVER THE DESIGN OR WORDS TO BE PRINTED: EMULISON UP AT LEAST 3 CENTIMETERS LARGER THAN THE OVER-ALL DESIGN; TAPE THIS SECURELY WITH MASKING TAPE. LOOKING THROUGH THE FILM AND ITS BACKING, YOU CAN EASILY SEE THE DESIGN. WITH A VERY SHARP XACTO KNIFE OR SPECIAL SWIVEL KNIFE, TRACE THE DESIGN, CUTTING ONLY THROUGH THE FILM EMULSION BUT NOT THE PLASTIC BACKING. REMOVE THE GREEN FILM EMULISON FROM THE AREAS YOU WANT THE INK TO PASS (REMOVE THE IMAGE AREA). CORRECTIONS ARE MADE WITH WATER SOLUBLE BLACKOUT. A LACQUER BASE INK MUST BE USED WITH THESE WATER SOLUBLE STENCILS.

FOLLOW THE "NEW SIMPLIFIED ADHERING TECHNIQUE" ON THE NEXT PAGE (FROM THE ULANO DATA SHEET, PACKED WITH THE FILM ROLL: EACH BRAND HAS ITS OWN PARTICULAR ADHERING INSTRUCTIONS - READ THEM).

DEPENDING ON THE EMULSION THICKNESS (DETERMINES LENGTH OF RUN) AND BACKING QUALITY, COST WILL RANGE FROM 25¢ TO $1.00 PER SQUARE FOOT. STENCIL FILM USUALLY COMES IN 40" X 150" ROLLS (AVERAGES $20.00/ROLL).

AT THE CAREER CENTER, WE USE WATER SOLUBLE STENCILS AND LACQUER BASE INKS. MANY SHOPS USE LACQUER STENCILS AND WATER BASE INKS.

THIS MODULE MAY BE DONE IN PLACE OF MODULE NUMBER 1401 01 011 AND 1401 01 011 3 "PHOTOGRAPHIC SCREEN PRINTING PLATES (FILM STENCIL)", IF YOU ARE ALREADY FAMILIAR WITH "BLUE POLY."

1401 12 010 1401 12 011
MODS NUMBER 1401 12 010 3 AND 1401 12 011 3 SHOULD BE DONE ALONG WITH THE FOLLOWING:

1401 12 301
MODULE NUMBER 1401 12 301 3 ORIENTATION TO SCREEN PRINTING

1401 12 302
MODULE NUMBER 1401 13 302 3 SCREEN PRINTING: TOOLS, EQUIPMENT & PREP.

1401 13 303
MODULE NUMBER 1401 13 303 3 PRODUCING A SINGLE COLOR SCREEN JOB

1401 13 304
MODULE NUMBER 1401 13 304 3 PRODUCING A MULTI-COLOR SCREEN JOB

INFORMATION

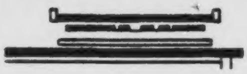
Technical Data Sheet

NEW ULANOCUT GREEN WATER SOLUBLE KNIFE-CUT FILM

3 MIL POLYESTER BASE FOR SILK SCREEN PROCESS PRINTING

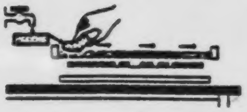
ULANOCUT is a screen process hand-cut film with high transparency on a (3 mil) polyester backing sheet. — For adhering, use water only. Sticks back for corrections. Adhesion is excellent to all fabrics. Adhering technique is simple, fast and clean. All inks are suitable except those containing water.

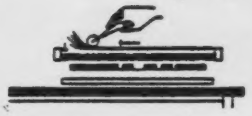
TRADITIONAL ADHERING TECHNIQUE



1. PREPARATION. Place cut stencil, film up on your build up board (smaller than inside measurement of frame). Position screen with squeegee side up on film.

2. ADHERING. Saturate a sponge with water. Move sponge slowly in one stroke over the fabric from the squeegee side. Slightly overlap strokes until entire surface is adhered. DO NOT RUB FILM WITH SPONGE.

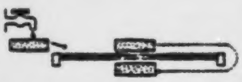


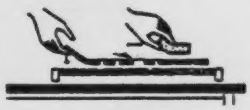


3. DRYING. With frame flat, dry film with a cold air fan from the squeegee side. To reduce drying time excess moisture may be removed by blotting with newsprint before drying with fan. Peel off backing sheet when film is dry. The adhesive will remain on the backing sheet.

NEW SIMPLIFIED ADHERING TECHNIQUE

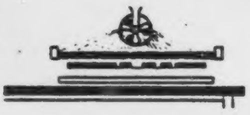
1. PREPARATION. This technique requires a well stretched screen. Using a clean sponge, thoroughly wet both sides of fabric with water.





2. ADHERING. Place film side of cut stencil against bottom of wet screen. Using light pressure, move wet sponge over entire surface of plastic backing to adhere film to fabric.

3. DRYING. With frame flat, dry film with a cold air fan from the squeegee side. To reduce drying time, excess moisture may be removed by blotting with newsprint before drying with fan. Peel off backing sheet when film is dry. Adhesive will remain on the backing sheet.



SCREEN PREPARATION

STRETCHING THE FABRIC

A mechanical or pneumatic stretching device is desirable for silk or polyester, but is essential for nylon. Each fabric type and mesh count has a correct tension which should be used. The fabric supplier will furnish this information. Correct tensioning of the fabric permits printing without too much off-contact, avoiding premature breakdown of ULANOCUT.

FABRIC CLEANING

All screens, new or used, (silk, nylon, wire or polyester) must be cleaned properly to insure tight adhesion and prevent "breakdown." The cleaning should incorporate a mechanical as well as a chemical action.

1. MECHANICAL TREATMENT

For Nylon or Polyester

A. Wet fabric with water.
B. Pour a half teaspoon of 500 mesh silicon carbide for each 16" x 20" area on the back side of the screen.
C. Use a wet rag to carefully scour the fabric on the stencil side for 2 to 3 minutes. Try to cover the screen completely.
D. Rinse the silicon carbide with a strong water spray. The 500 mesh silicon carbide has a particle size of 18-20 microns, so that it cannot clog even the finest nylon.

This treatment is done only once when the fabric is newly stretched on the frame. Constant repeating of the abrasive cleaning will weaken the fabric.

2. DEGREASING OF NYLON, POLYESTER, METAL AND SILK

All fabrics new and used must be degreased every time a stencil is to be adhered.

A. Wet both sides of the screen with cold water and sprinkle both sides with powdered trisodium phosphate.
B. Using a soft brush, thoroughly scrub both sides.
C. Rinse the screen very thoroughly with a forceful spray of water.
D. Allow the screen to drain, and dry.

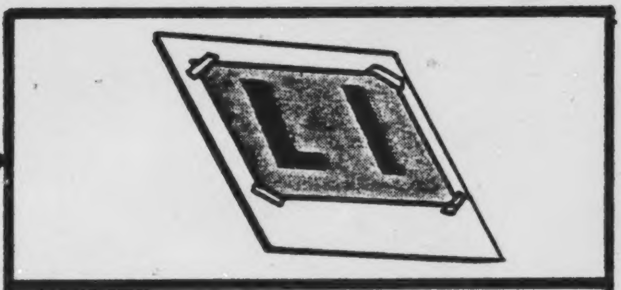
On finer fabrics, the mesh may become clogged with the relatively large abrasive particles contained in scouring powders such as "Ajax." The preceding recommended degreasing with trisodium phosphate is preferred.

JOB STEPS

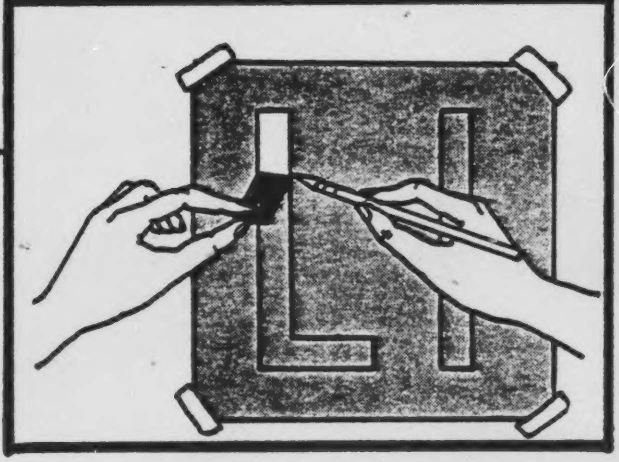
1. TAKE YOUR EQUIPMENT TO YOUR WORK AREA. BE SURE TO READ THE INFORMATION ON PAGES 3 AND 4 OF THIS MODULE.

2. PREPARE YOUR ORIGINAL DESIGN: THE THINEST LINE MUST BE AT LEAST 1 MILIMETER. SEE INSTRUCTOR IF YOU HAVE ANY QUESTIONS. PREPARE A SIMPLE, COURSE DESIGN.

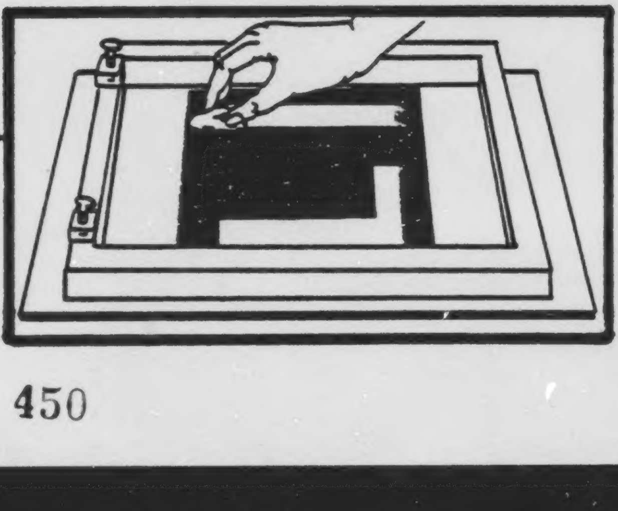
3. CUT A PIECE OF "ULANOCUT GREEN" FILM AT LEAST 3 CENTIMETERS LARGER (ON ALL 4 SIDES) THAN YOUR ORIGINAL DESIGN AND TAPE THIS DIRECTLY ON YOUR ORIGINAL.



4. USING THE SWIVEL OR XACTO KNIFE, REMOVE THE FILM FROM THE IMAGE AREAS.



5. USING A WET SPONGE, CLEAN THE SCREEN. CAREFULLY ADHERE THE FILM TO THE SCREEN (SO THE SOFT EMULSION IS UNDER THE SCREEN WHEN PRINTING), WORKING WITH THE BOTTOM OF THE SCREEN UP (SEE DATA SHEET, ON PAGE 4 OF THIS MODULE).

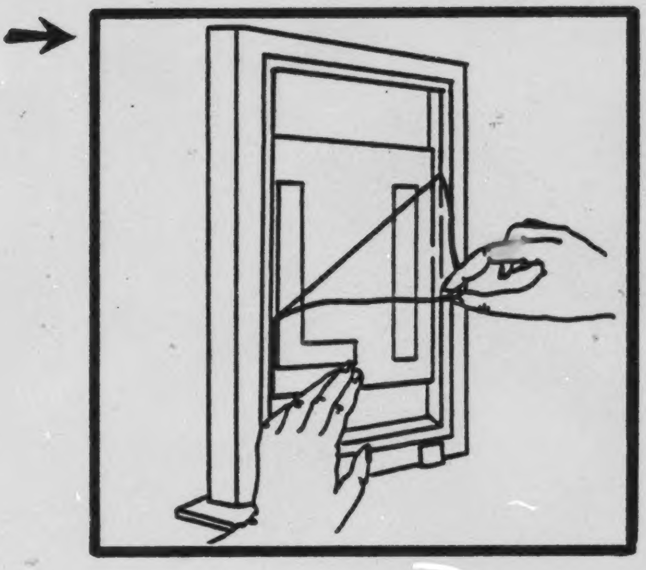


JOB STEPS

6. WHEN DRY, CAREFULLY REMOVE THE PLASTIC BACKING MAKE NECESSARY CORRECTIONS WITH BLOCKOUT. MASK OUT THE SIDES WITH WRAPPING PAPER AND TAPE.

7. PRINT. (BE SURE TO USE LACQUER INK)

8. CLEAN OFF THE INK WITH ITS PARTICULAR CLEANER, CLEAN THE FILM WITH WARM WATER.



graphics

unit: PLATEMAKING AND PROOFING

capital area career center

module: 1401 12 011
1401 12 011 3 **date:** DECEMBER 1977 **level:**

skill title: PHOTOGRAPHIC SCREEN PRINTING PLATES (FILM STENCILS)

developed & written by: GLEN PETTIT

visuals by: MARY ANN GAMEL

PERFORMANCE OBJECTIVE

YOU ARE GOING TO LEARN:

HOW TO EXPOSE, DEVELOP, WASH-OUT AND ADHERE A SHEET OF "BLUE POLY 3" PRESENSITIZED PHOTO FILM TO A SCREEN FOR PRINTING.

IN ORDER TO DO THIS YOU WILL NEED:

ULANO "BLUE POLY 3" PRE-SENSITIZED PHOTO FILM
NU ARC PLATEBURNER
SINK & TRAY
WASHOUT BASE
SCREEN FRAME
ULANO A & B POWDER
HOT & COLD WATER
NEWSPRINT PAPER
BUILD UP MATERIALS
TRISODIUM PHOSPHATE
SPC ENZYME
THERMOMETER
POSITIVE
HOSE
CARDBOARD
PAPER TOWELS
BLOCKOUT

WE WILL KNOW YOU CAN DO IT WHEN:

1. YOU ARE SURE THE PRE-SENSITIZED PHOTO FILM IS DENSE AND OPAQUE IN THE NON-IMAGE AREAS AND CLEAR IN THE IMAGE AREAS.

2. YOU ARE SURE THE FILM STENCIL IS FLAT, SMOOTH AND SECURELY ADHERED TO THE SCREEN FOR MAXIMUM RUN.

3. YOU ARE SURE THE PRINTED PIECES ARE CLEAN, SHARP, UNIFORM AND FAITHFULLY DUPLICATE THE ORIGINAL POSITIVE.

A TAPE OF THIS MODULE IS AVAILABLE.

INFORMATION

A PRE-SENSITIZED PHOTO FILM (OR PHOTOGRAPHIC SCREEN PRINTING PLATE) SIMPLY MEANS THAT THE FILM EMULSION IS SENSITIVE TO STRONG LIGHT. WE USE OUR NU ARC PLATEBURNER TO EXPOSE THIS BLUE POLY. AT HOME YOU COULD USE A SUN-LAMP OR EVEN THE OUTDOOR SUN FOR 10 TO 20 MINUTES. THERE ARE REALLY ONLY FOUR STEPS REQUIRED:

1.	EXPOSE	(NU ARC PLATEBURNER, 1 MINUTE)
2.	DEVELOP	(A & B OR HO_2, 1 1/2 MINUTES)
3.	WASH-OUT	(WATER AT 35°C)
4.	ADHERE	(UNTIL DRY)

THERE ARE MANY PRODUCTS LIKE BLUE POLY. FOR OUR FUNCTIONS, WE HAVE FOUND THIS TO BE EASY, CLEAN, FAST, SURE AND SIMPLE FOR BEGINNING STUDENTS. WITH BLUE POLY 3, THE 3 IS THE THICKNESS OF THE POLYESTER SUPPORT.

FILMS COME IN ROLLS OF 40" X 150" OR 40" X 300". COST OF BLUE POLY 3 IS ABOUT $25 FOR A SMALL ROLL OR 60¢ PER SQUARE FOOT ($6/ SQUARE METER). THE SPECIAL DEVELOPER (A & B) COSTS 4-6 SQ. FEET (1/2 SQ. METER).

BE SURE TO CAREFULLY READ THE TECHNICAL DATA SHEET ON THE NEXT FEW PAGES. THESE SHEETS COME PACKED WITH THE PHOTO FILM AND MAY CHANGE. CHECK TO SEE IF THERE IS A MORE CURRENT SHEET WITH THE FILM ROLL.

IT IS A GOOD IDEA TO FIRST EXPOSE, DEVELOP AND WASH-OUT A SMALL TEST STRIP OF BLUE POLY TO BE SURE YOU ARE CORRECT EVERYWHERE.

THE POSITIVE CAN BE HAND DRAWN ON CLEAR PLASTIC OR MADE PHOTOGRAPHICALLY. ANY DESIGN MAY BE USED. THIS MOD (#1401 12 011) SHOULD BE DONE ALONG WITH:

MOD # 1401 13 301	ORIENTATION TO SCREEN PRINTING
MOD # 1401 13 302	SCREEN PRINTING: TOOLS, EQUIPMENT AND PREP
MOD # 1401 13 303	PRODUCING A SINGLE COLOR SCREEN JOB
MOD # 1401 13 304	PRODUCING A MULTI-COLOR SCREEN JOB

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Also Los Angeles • Chicago • Zurich

Technical Data Sheet

ulano® BLUE POLY-2® BLUE POLY-3®

2 MIL POLYESTER SUPPORT — 3 MIL POLYESTER SUPPORT

PRESENSITIZED SCREEN PROCESS FOTOFILMS

ULANO BLUE POLY

ULANO BLUE POLY-2 or 3 is a presensitized blue colored emulsion on a 2 or 3 mil polyester support, and is available in rolls –

40" x 150" — 40" x 300"
44" x 150" — 44" x 300"

packaged six rolls per carton;

or in sheets – 20" x 30" – 6 sheets per tube – 6 tubes per carton.

The outstanding characteristic of the ULANO BLUE POLY emulsion is its combination of excellent resolution and wide latitude – making it suitable for obtaining finely detailed stencils from many types of originals.

ULANO BLUE POLY has a protective outer coating that prevents sticking under conditions of high relative humidity.

EQUIPMENT FOR MAKING A ULANO BLUE POLY SCREEN

1. A high intensity point source of actinic light –
   - A. Carbon Arc } Best
   - B. Metal Halide Lamp } Best
   - C. High Pressure Mercury Vapor } Usable but less desirable
   - D. Pulsed Xenon } Usable but less desirable
   - E. Quartz Iodide Lamp } Usable but less desirable
2. A vacuum frame
3. ULANO "A" and "B" Developer
4. Developing Tray (stainless steel, glass, enamel or plastic)
5. Controlled temperature water supply (preferably with an aerator nozzle)
6. A cleaned, stretched screen
7. Newsprint (unprinted)
8. Build-up board
9. Stencil removing chemicals
10. Blockout – ULANO #60 or ULANO EXTRA HEAVY

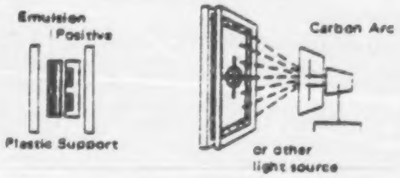
SCREEN PREPARATION

STRETCHING THE FABRIC

A mechanical or pneumatic stretching device is desirable for silk or polyester, but is essential for nylon. Each fabric type and mesh count has a correct tension which should be used. The fabric supplier will furnish this information. Correct tensioning of the fabric permits printing without too much off-contact, avoiding premature breakdown of the BLUE POLY due to overflexing.

FABRIC CLEANING

All screens, new or used, (silk, nylon, wire or polyester) must be cleaned properly to insure tight adhesion and prevent "breakdown." The cleaning should incorporate a mechanical as well as a chemical action.



EXPOSURE

Three important properties in preparing a fotostencil for screen process printing are:

A. Correct Film thickness
B. Optimum film strength
C. Best adhesion of film to fabric

In examining a light source for use in exposing fotostencil films the important criteria are intensity and spectral distribution (somewhat related to color temperature).

ULANO PRESENSITIZED FOTOSTENCIL FILMS are sensitive to light in the blue, violet, and near ultra violet range. A quality carbon arc lamp (preferably motor driven for constant output) which is rich in this range, will yield exposures high in actinic (chemically active) light.

A high intensity actinic light exposure yields:

A. A soft top – for best adhesion to the fabric.
B. A hard bottom – for the highest wear resistance during printing.

To achieve the highest possible intensity on the fotofilm, the light source should be moved as close as possible to the film. With the carbon arc, the minimum distance (to insure uniform exposure) is the length of the diagonal of the positive being exposed.

In addition to the intensity of light employed, the quantity of the light affects the stencil directly.

A. The longer the exposure, the thicker the film. As the film gets too thick, it embrittles more easily and its resistance to squeegee wear decreases. Too thin a film frequently tends to develop rapid pinholing.

B. The longer the exposure, the greater the undercutting. The close approximation of the carbon arc to a point source tends to minimize this source of error.

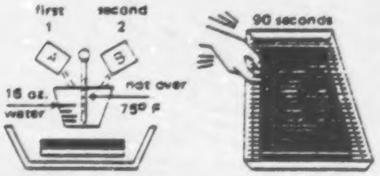
TECHNICAL DATA SHEET (ULANO) REPRODUCED HERE IN TOTAL IS NOT COPYRIGHTED MATERIAL.

Always expose ULANO BLUE POLY through the polyester support (the shiny side). Approximate exposure times for ULANO BLUE POLY are as follows:

35 amp carbon arc at 30 inches - 3 minutes.
50 amp carbon arc at 38 inches - 3 minutes.

A proper light source correctly used is the only way to be sure of having consistent high quality stencils.

DEVELOPING



The development of a fotostencil film is as important as the development of a silver positive.

The correct developer for ULANO BLUE POLY is ULANO "A" and "B" Powder. No other developer is recommended for ULANO BLUE POLY.

ULANO "A" and "B" Powder is available in bulk sets (10 lbs. of "A" plus 11 lbs. of "B") or pre-measured sets in foil pouches (26 grams of "A" in a yellow pouch and 35 grams of "B" in a blue pouch). The pre-measured sets are packed 8 per box, 12 boxes (96 sets) to the master carton.

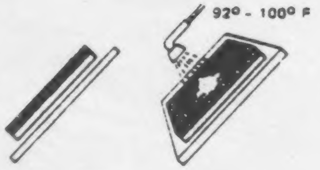
To prepare the developer pour the yellow pouch "A" (26 grams) into a measured pint of water not over 75° F. Stir or shake until dissolved. Then add the blue pouch "B" (35 grams) and stir until this is dissolved. (B will not dissolve unless A is already in the solution.) Be sure all powder is dissolved.

Cover the film quickly and uniformly with developer. One way to do this is to place the film in the tray – emulsion side up – and pour the developer quickly and uniformly over the film. Use enough developer to cover the film. Rock the tray occasionally during the developing. The developing time for ULANO BLUE POLY is 90 seconds.

IMPORTANT

1. Keep the developer temperature between 64° and 75° F. (18° to 24° C.)
2. Protect the developer from strong light – or it may decompose.
3. DO NOT BOTTLE AND SAVE USED DEVELOPER – IT FORMS A STRONG GAS. MAKE FRESH DEVELOPER EVERY DAY.
4. If the emulsion wrinkles up or floats off the polyester support during the washout, it may indicate developer is either spoiled or too warm or cold. Exposing BLUE POLY through the emulsion side instead of through the polyester support, will also cause the emulsion to leave the base during washout.
5. Use clean developer trays.
6. The solution will normally develop a yellow color as soon as a piece of film is immersed in it. If the developer turns brown, however, it is a sign of decomposition – and should be discarded.

WASHOUT



Place the BLUE POLY with the emulsion side up on an inclined flat surface to allow the wash water to run off.

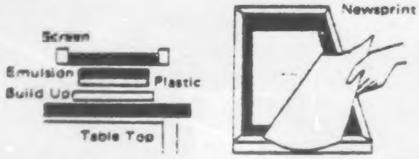
Use water at a temperature of 92° to 100°F. (33° to 38° C.) Flood the stencil with plenty of water – and keep washing it until the blue color is removed from the unexposed areas – continuing for another 15 to 30 seconds. Finish by rinsing with cold water.

If a lack of sufficient warm water requires tray washing, it will be necessary to change water once or twice. Be sure to finish the tray wash with a running cold water rinse.

WASHOUT SUGGESTIONS

1. Put an aerator nozzle on your washout hose. This will break the force of the water and protect fine details.
2. Be sure to wash the whole surface of the film – even where there is no design.
3. Over-washing rarely causes a problem – Under-washing can result in scum – traces of emulsion in the printing areas. The cold rinse also greatly helps prevent any scumming.
4. Control of water temperature is important for making consistent stencils. A thermostatic water regulator is a convenience.
5. The best chilling of the stencil to prevent scum is obtained by slowly lowering the water temperature while continuing to wash.

ADHERING STENCIL TO FABRIC



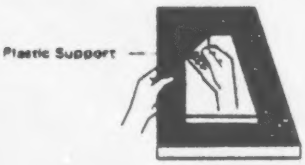
The chilled BLUE POLY stencil is placed, emulsion side up, on a flat build-up, slightly smaller than the inside dimensions of the frame, covered by a sheet of vinyl or newsprint. Carefully, lower the CLEANED screen on to the stencil (with the squeegee side of the screen up). DO NOT USE EXCESSIVE PRESSURE. In almost all cases, the weight of the frame is enough to make complete contact.

Excess moisture is removed from the stencil by blotting with newsprint. This is done by gently wiping over the newsprint with a soft clean rag. DO NOT USE PRESSURE. Keep changing the newsprint until it is dry and picks up little or no [illegible] moisture. Use three, four or five changes of paper.

ADHERING POINTERS

1. Keep the build-up clean. A glass plate makes an excellent one – and it is easy to clean.
2. Avoid dust at all times. Have the screen ready to adhere to the stencil as soon as the BLUE POLY is placed on the build-up. The screen should be freshly cleaned before the stencil is washed out. If this is not practical, rinse the screen and let it drain – just before washing out the stencil.
3. The best adhesion is obtained by adhering immediately after washout.
4. Use only newsprint for blotting – (unprinted newspaper stock). Do not use newspaper – the ink can cause problems.
5. The object of blotting is to remove all excess moisture by absorption. Undue pressure, on either the frame or in the blotting, will result in pushing the fabric threads into the emulsion, causing pinholing at the thread junction during the printing steps. In addition, the displacement of the emulsion by the thread can cause ragged sawtooth edges.
6. The etched out chilled stencil is preferably adhered to the freshly cleaned damp screen. This avoids contamination of the fabric with air-borne soil.

DRYING OF THE SCREEN



It is best to leave the screen undisturbed on the build-up for at least five minutes. After five minutes, a gentle fan may be used to speed the drying. Uneven drying will result in loss of register so that swift drying should be approached with caution.

Do not use heat during the drying. It can result in poor adhesion and loss of register.

When the fabric is dry – but before the emulsion is completely dry – the open areas of the screen may be filled in with ULANO =60 BLOCKOUT or ULANO EXTRA HEAVY BLOCKOUT. Use the ULANO BLOCKOUT on the back side of the screen – going right over the polyester support. The filler will dry along with the stencil. When the filler and the stencil are completely dry, the polyester backing sheet is ready to be peeled. The correct peeling technique is to start at a corner and peel the polyester back at 180 degrees – parallel to the fabric. The polyester should release easily from the dried BLUE POLY Stencil. If there is any resistance, in peeling, continue to dry the screen.

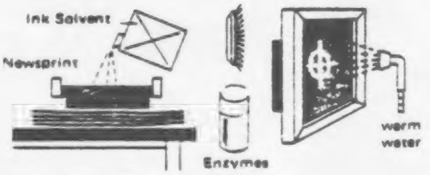
The adhesive which laminates the emulsion to the polyester support will remain partially with the emulsion. This adhesive can be removed by washing from the film side with a soft rag wet with naptha, benzine, xylene, toluene or carbon tetrachloride.

HANDLING OF BLUE POLY

BLUE POLY does not require a dark room – but the film should be protected from sunlight and bright fluorescent lights. Yellow fluorescent tubes and yellow incandescent "bug lamps" permit indefinite exposure of the film. Fotostencil films are composed of a gelatin matrix. This gelatin is a polymer of tremendous elasticity and tensile strength – when correctly plasticized by water. To help keep ULANO FILMS properly plasticized, they are formulated with materials which help retain the correct moisture balance in the film – provided the film is maintained in storage in an atmosphere of reasonable humidity. 50% relative humidity is great, 40% relative humidity is good, 30% relative humidity is borderline.

When outside temperatures drop so that heat has to be used, the relative humidity will often be below 10%. No matter how much humectant is put into the film, the dry atmosphere will dehydrate it. Curling film and film that chips along the edge when cut is the result. It is easy to avoid. Humidify a small area, with an inexpensive room humidifier, where you store and cut your film. It costs very little to operate – and the savings in film is more than worth it.

REMOVAL OF STENCIL FROM FABRIC



Clean off all ink residues from the screen with the proper solvent. Let the solvent dry. One of the three following methods may be used to remove the stencil from the fabric.

A. Wet the screen on both sides with hot water and let stand for five minutes. Then, with a brush and hot water, the stencil may generally be cleaned out of the fabric.

B. From silk, metal, and synthetic fabrics, the BLUE POLY may be removed with ULANO SPC ENZYME. Wet the fabric on both sides. Sprinkle the enzyme on both sides. Cover the screen with a squeezed out wet rag and let stand five minutes, then hose off the stencil with hot water. After cleaning out the stencil with the enzyme, it is necessary to wipe the screen with white vinegar or 5% acetic acid so as to inactivate the enzyme and prevent its attack on the fabric and the next stencil. Rinse thoroughly with cold water.

C. From metal, nylon and polyester fabric the BLUE POLY may be removed with a Sodium Hypochlorite Solution (household chlorine bleach solution).

JOB STEPS

1. COLLECT YOUR MATERIALS AND GO TO YOUR WORK AREA.

2. PREPARE YOUR ORIGINAL DESIGN. THIS CAN BE NEARLY ANYTHING; DRAWING, HALFTONE, LIVE ART, ETC. A 5" X 7" OR 12 X 20 CM SIZE IS IDEAL. MAKE YOUR ORIGINAL INTO A POSITIVE, OPAQUE IMAGE ON CLEAR PLASTIC. FOLLOW THESE STEPS:

A. MAKE YOUR DRAWING WITH OPAQUE INK/POINT ON CLEAR PLASTIC.

B. MAKE A PMT TRANSPARENT RECEIVER, OR

C. CONTACT A POSITIVE FROM LIVE NEGATIVE.

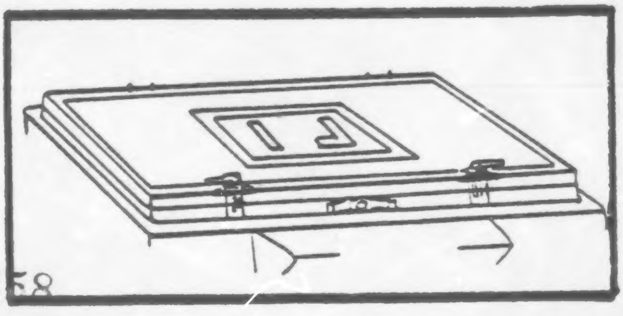
SHOW YOUR DESIGN TO THE INSTRUCTOR/ MANAGER BEFORE MAKING THE POSITIVE.

3. MIX YOUR DEVELOPER: FIRST, MIX "A" INTO 500 ML OF 24 C. WATER. THEN, ADD "B". HAVE THE WASHOUT HOSE RUNNING WITH THE TEMPERATURE AT 35° C; THIS MAY TAKE 5-10 MINUTES TO BALANCE. GO ON WHILE IT BALANCES.

4. TAKE A SMALL TEST STRIP OF BLUE POLY AND DO JOB STEPS 6, 7, 8 AND 9 TO CHECK TO SEE IF YOU HAVE ALL YOUR STEPS CORRECT.

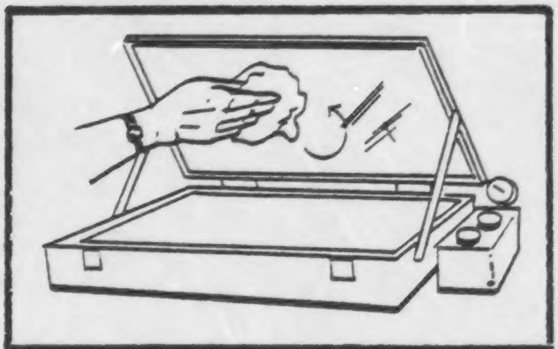
5. CUT A PIECE OF BLUE POLY 3 THAT IS AT LEAST 3 CM OVERSIZE ON ALL FOUR SIDES (SOME 8" X 10" PIECES SHOULD BE ALREADY CUT. CHECK PLATE STORAGE CABINET, TOP DRAWER).

6. PLACE THE BLUE POLY EMULSION SOFT SIDE DOWN IN THE PLATEBURNER. PLACE THE POSITIVE ON TOP OF THE BLUE POLY, WRONG READING, SO THE DESIGN OR WORDS ARE BACKWARDS AS YOU LOOK AT IT IN THE PLATEBURNER (THIS IS WHERE MANY PEOPLE MAKE A MISTAKE. THE SOFT EMULSION IS ADHERED TO THE BOTTOM OF THE SCREEN. IT MUST BE READABLE THROUGH THE SCREEN AS YOU PRINT).



JOB STEPS

7. CHECK TO SEE IF THE GLASS IS CLEAN. THEN CLOSE THE VACUUM FRAME, TURN ON VACUUM, FLIP, EXPOSE FOR ONE MINUTE.



8. REMOVE THE EXPOSED BLUE POLY. GO TO THE DARKROOM AND DEVELOP IN A TRAY WITH 500 ML OF ULANO A & B DEVELOPER FOR EXACTLY 90 SECONDS AT 24° C.

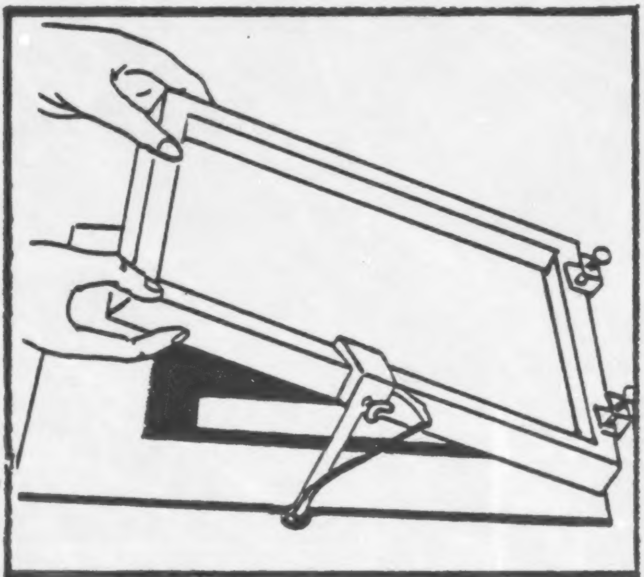
9. PLACE THE DEVELOPED FILM ON A LARGE PIECE OF GLASS AND WORK ON THE WASHER-VIEWER SINK IN THE DARKROOM (THE WHITE LIGHT FROM BELOW WILL HELP). WITH THE WASHOUT HOSE RUNNING AT ABOUT 35° C., (HOLD THE RUNNING HOSE HORIZONTAL), THE STREAM SHOULD BE 1/2 METER LONG WHEN HELD 10 CM ABOVE THE WATER OR NEARLY THE WIDTH OF THE SINK WHEN HELD A FEW INCHES HIGH. ALLOW THIS STREAM OF 35° C. WATER TO WASH OUT ALL THE UNEXPOSED OR SOFT EMULSION. HOLD THE NOZZEL 1/4 M AWAY.

10. IT IS A GOOD IDEA TO ROTATE THE GLASS PLATE THE BLUE POLY IS ON TO ELIMINATE WASH-OFF ON A SIDE. TILT THE GLASS AWAY FROM YOU SO IT IS EASY TO HOLD AND TURN. CONCENTRATE ON THE IMAGE AREA ONLY. WHEN THE IMAGE AREAS ARE CLEAR, RINSE THE BLUE POLY IN COOL WATER.

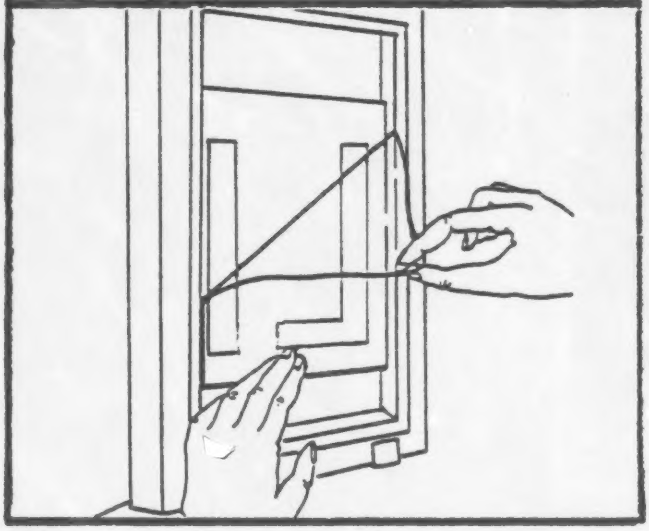
JOB STEPS

11. ADHERE THE STENCIL. PLACE THE COOL BLUE POLY EMULSION SIDE UP ON SEVERAL LAYERS OF CARDBOARD THAT ARE CUT SLIGHTLY SMALLER THAN THE INSIDE SCREEN AND WITH A LAYER OF NEWSPRINT OR PAPER TOWEL ON TOP. CAREFULLY LOWER THE CLEANED (SLIGHTLY MOIST, NOT WET) SCREEN ON TOP OF THE STENCIL, IN CORRECT POSITION. YOU MUST HAVE POSITION ON THE FIRST TRY. REMOVE EXTRA MOISTURE FROM THE INSIDE BY GENTLY LAYING A LENGTH OF PAPER TOWEL ON THE WET SCREEN FOR A FEW SECONDS (DO THIS 5-6 TIMES WITH DRY PIECES). DO NOT DISTURB THE FRAME.

NOTE: ADHERE THE STENCIL TO THE SCREEN FRAME SOMEWHERE AWAY FROM WHERE IT MIGHT BE ACCIDENTLY DISTURBED.



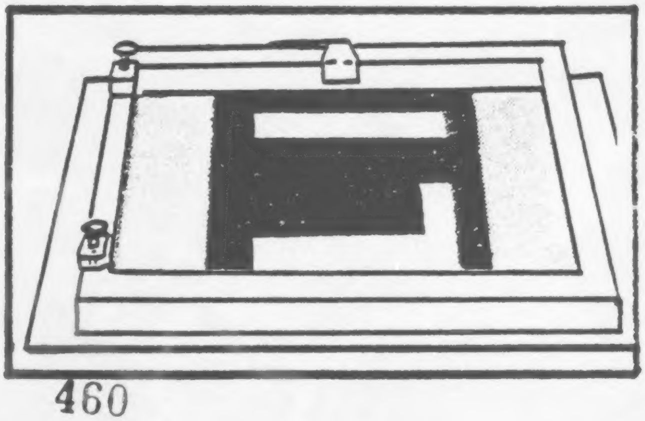
12. REMOVE THE BACKING (BASE) WHEN THE EMULSION IS DRY. BRUSH ON BLOCKOUT TO PLUG ANY UNWANTED PIN HOLES.



13. NOW MASK OUT THE SIDES OF THE FRAME USING 5 CM WIDE PAPER TAPE AND WRAPPING PAPER. FOLLOW THESE DIRECTIONS:

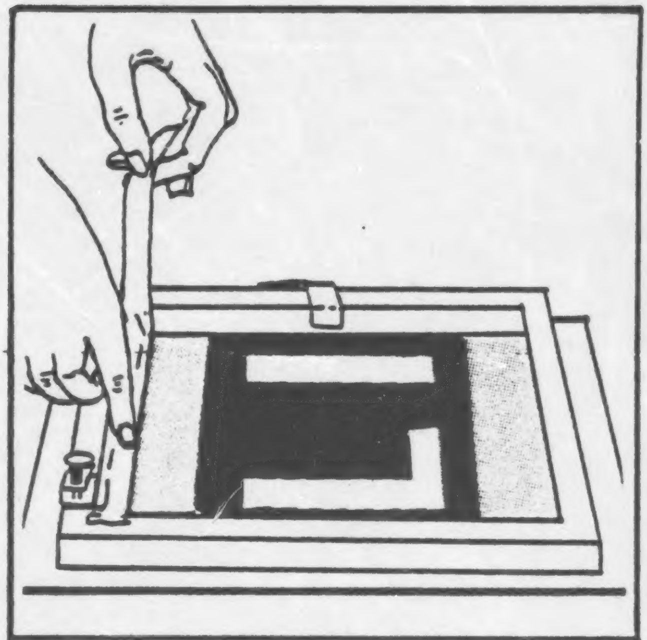
A. DETERMINE IN WHICH DIRECTION YOU WILL BE PULLING THE RUBBER SQUEEGEE.

B. BEGIN BY PLACING A PIECE OF WRAPPING PAPER THE WIDTH OF YOUR FRAME AT EACH END - WHERE THE SQUEEGEE WILL START AND STOP.



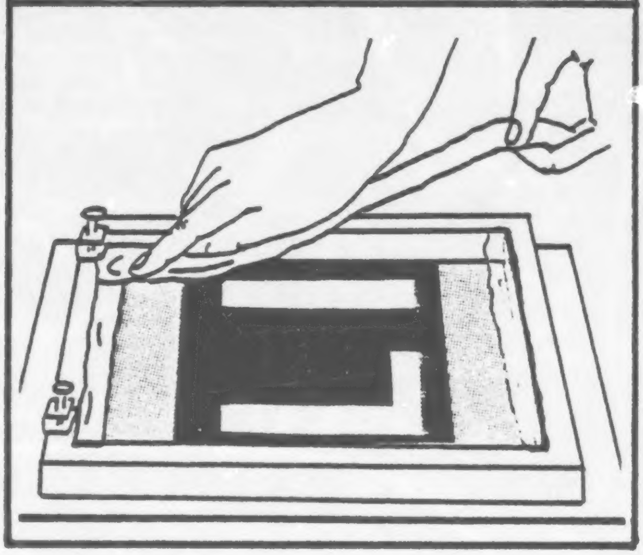
JOB STEPS

C. TAPE THE PAPER TO THE FRAME. USE THE TAPE SO THAT 1/2 OF THE TAPE IS ON THE PAPER AND 1/2 ON THE SCREEN. NOTE: THE TAPE MUST BE AT LEAST 2 CM FROM YOUR IMAGE.



D. NOW TAPE PAPER TO EACH SIDE OF THE FRAME IN THE SAME WAY. REMEMBER: THE SIDE PIECES OF TAPE WILL ACT AS "RAILS" FOR THE SQUEEGEE.

FOR A SHORT RUN THIS IS ALL THE PAPER AND TAPE YOU WILL NEED. FOR LONGER RUNS, USE MORE LAYERS; ASK YOUR INSTRUCTOR.



14. HAVE THE INSTRUCTOR/MANAGER LOOK OVER YOUR WORK. CHECK TO SEE IF SOMEONE IN THE OTHER CLASS MAY WISH TO USE YOUR SAME CHEMICALS. CLEAN UP EVERYTHING: PLATEBURNER, POSITIVE, GLASS PLATE (WASH & DRY), WASH SINK, CARDBOARD, PAPER TOWELS, WRAPPING COUNTER.

15. GO ON WITH MODS 1401 13 301, 1401 13 302, AND 1401 13 303.

graphics

unit: PLATEMAKING AND PROOFING

capital area career center

1401 12 012
module: 1401 12 012 3 date: DECEMBER 1977 level:

skill title: ELECTRONIC SCANNER (PLATEMAKING)

developed & written by: GLEN PETTIT

visuals by: STEVE BRAMER

PERFORMANCE OBJECTIVE

YOU ARE GOING TO LEARN:

1. HOW TO GET THE RONEOTRONIC 400 ELECTRONIC STENCIL CUTTER READY FOR OPERATION.
2. HOW TO CHANGE AND CLEAN THE STYLUS NEEDLE AND FILTER.

IN ORDER TO DO THIS YOU WILL NEED:

THE RONEOTRONIC 400 ELECTRONIC STENCIL CUTTING MACHINE

A STENCIL

COPY TO BE MADE INTO A MIMEOGRAPH STENCIL

WE WILL KNOW YOU CAN DO IT WHEN:

1. YOU CAN MAKE A CLEAN, CLEAR AND SHARP MIMEOGRAPH STENCIL AND COPY.
2. YOU CAN SET CLEAR CONTRAST AND TONAL DENSITY ON YOUR MIMEOGRAPH STENCIL.
3. YOU CAN MAINTAIN THE MACHINE IN GOOD RUNNING ORDER AND PERFORM ROUTINE MAINTENANCE ON THE STYLUS, FILTER, FUSES AND CLEANING.

A TAPE OF THIS MODULE IS AVAILABLE.

WORD GUIDE

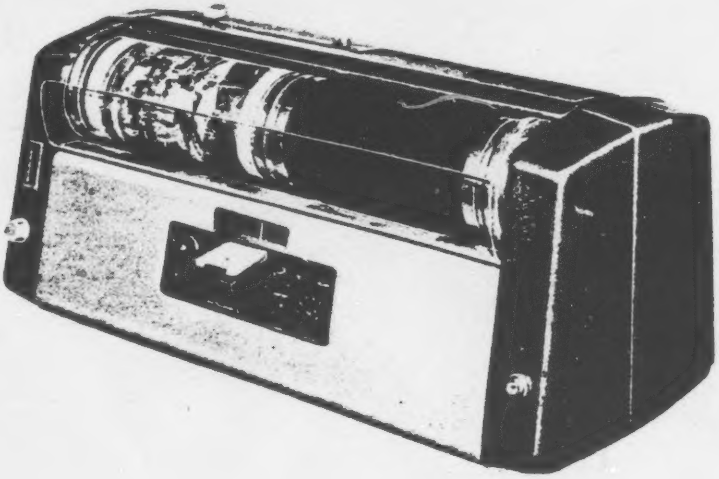
STENCIL - FOR MIMEOGRAPH; OPEN AREAS ARE CUT SO INK MAY PASS AND LEAVE AN IMAGE

INFORMATION

NOTE: WORK WITH 1 OR 2 OTHERS FOR THIS MOD.

AN ELECTRONIC STENCIL CUTTER HAS A FINE NEEDLE WHICH IS HEATED. WHEN THIS NEEDLE TOUCHES THE SPECIAL STENCIL, IT MELTS THE WAX AWAY. THE LARGE CYLINDER HAS BOTH THE ORIGINAL COPY AND THE STENCIL. AS THE CYLINDER TURNS AROUND, A LIGHT METER READS THE COPY (BLACK OR "NO LIGHT" ALLOWS THE NEEDLE TO TOUCH THE STENCIL; LIGHT OR WHITE PAPER WILL NOT ALLOW THE NEEDLE TO CUT).

WHEN A STENCIL IS MADE ON A TYPEWRITER, THE KEY OR LETTER STRIKES THE STENCIL AND SHOVES THE EMULSION (COATING) AWAY. ON A LONG RUN ON THE MIMEOGRAPH, THIS EMULSION MAY BE SMASHED DOWN INTO THE ORIGINAL OPENING. A STENCIL CUT ON AN ELECTRONIC STENCIL CUTTER TAKES AWAY THIS EXTRA EMULSION AND CAN DO A LONGER RUN. NEARLY ANYTHING CAN BE REPRODUCED WITH THIS MACHINE.



YOU CAN TYPE ON, DRAW ON, OR ADD OTHER WORDS OR PICTURES TO YOUR ORIGINAL COPY. THIS CAN THEN BE PASTED UP AND USED AS THE ORIGINAL. THE STENCIL IS CUT AND WILL REPRODUCE EVERYTHING. YOU DO NOT HAVE TO TYPE EVERY PAGE ON A STENCIL.

INFORMATION

THERE ARE MANY MACHINES LIKE THIS ON THE MARKET TODAY, COSTING $600 UP. OUR RONEOTRONIC 400 COST NEARLY $2,000 (IT CAN ALSO MAKE 4-COLOR SEPARATIONS AS USED IN GRAPHICS). MIMEOGRAPH STENCILS COST ABOUT 35¢ EACH. THE CUTTING STYLUS WILL CUT 12 STENCILS AND COSTS NEARLY A DOLLAR. FIGURE THE AVERAGE COST TO MAKE AN ELECTRONIC STENCIL IS ABOUT 45¢ EACH.

READ OVER THE INSTRUCTION BOOK.

STUDY THESE WORDS:

HALFTONES - PHOTOGRAPHS CANNOT BE PRINTED UNLESS THEY ARE MADE INTO DOTS; LARGE DOTS FOR BLACK AND SMALL DOTS FOR LIGHT SHADES, ALL THESE DOTS WHICH MAKE UP A PICTURE (10,000 PER SQUARE INCH) ARE CALLED HALFTONES.

LIVE - A SIMPLE DRAWING OR ARTWORK, MADE WITH SOLID COLORS, NO GRAYS.

WASH - A DRAWING MADE WITH CHARCOAL OR THIN WATERCOLORS. A WASH DRAWING WOULD REPRODUCE VERY GRAY AND MUDDY.

TONE - HOW DARK OR SOLID A COLOR IS, THE QUALITY OR STRENGTH OF A COLOR.

CONTRAST - BLACK ON WHITE IS HIGH CONTRAST WHILE GRAY ON GRAY (RED ON GREEN) IS LOW CONTRAST. IT IS THE DIFFERENCE BETWEEN COLORS OR TONES.

WORD GUIDE

CLOCKWISE - TO THE RIGHT

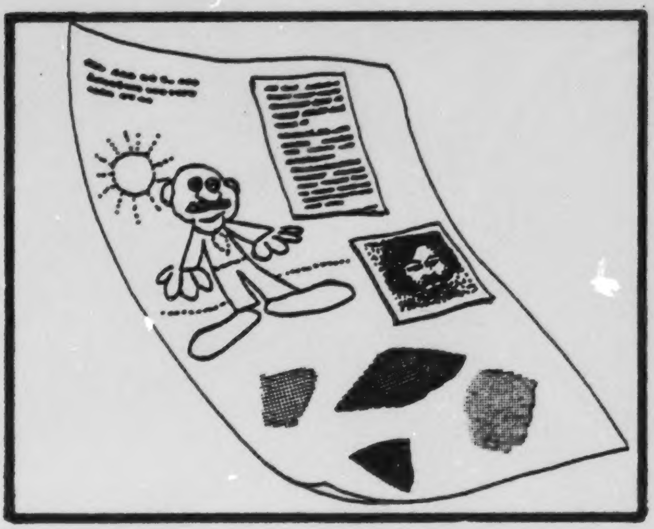
JOB STEPS

1. TAKE ALL EQUIPMENT TO YOUR WORK AREA.

2. TURN BOTH WHITE KNOBS FULLY CLOCKWISE FIRST, THEN TURN THE MAINS SWITCH "ON", SO THE MACHINE WARMS UP AT LEAST 5 MINUTES.

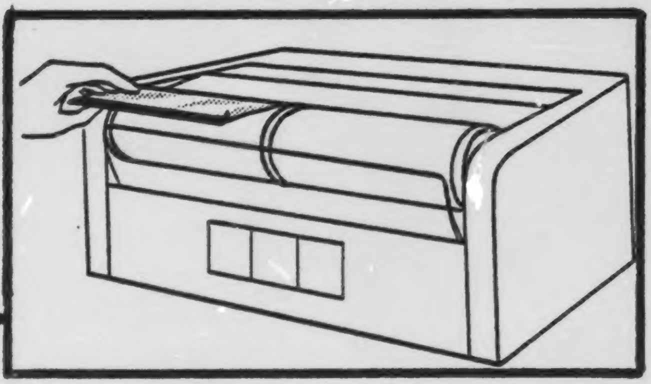
3. GET YOUR COPY READY. TAKE A SHEET OF 8 1/2" X 11" PAPER AND:

   A. TYPE A FEW LINES ON IT.
   B. CUT A FEW PARAGRAPHS OUT OF A MAGAZINE AND GLUE THEM ON.
   C. DRAW A PICTURE USING BOTH A DARK FELT MARKER AND A PENCIL.
   D. CUT A HALFTONE (PRINTED PICTURE) FROM A MAGAZINE AND GLUE ON.
   E. TAKE SOME COLORED MARKERS AND PENCILS AND DRAW SOME SMALL AREAS WITH THE BASIC COLORS ON YOUR SHEET.

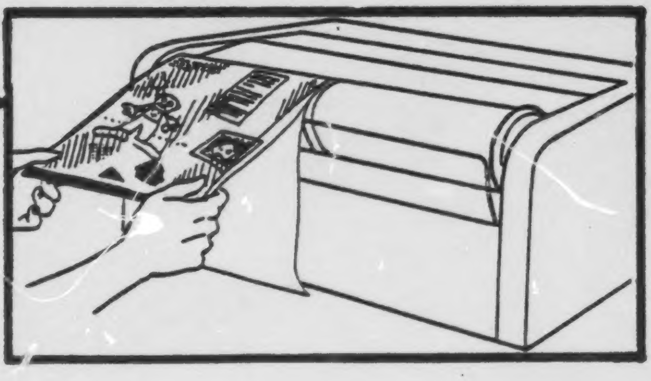


4. FIT THIS ORIGINAL COPY UNDER THE CLEAR SHIELD (LEFT SIDE).

   A. RAISE THE COVER, UNLOCK THE SHEILD CLIPS AND LIFT THE LOWER STRIP OF THE PLASTIC SHIELD.



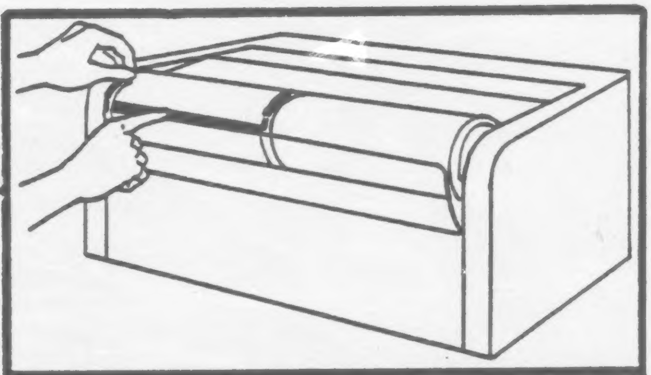
   B. POSITION THE ORIGINAL TO THE GUIDES (OR CENTERED AND WITH CARE, TURN THE CYLINDER AROUND TO CLOSE THE SHIELD.



JOB STEPS

C. KEEP A SLIGHT TENSION ON THE LOWER STRIP TO BE SURE THE ENTIRE SHIELD IS FLAT.

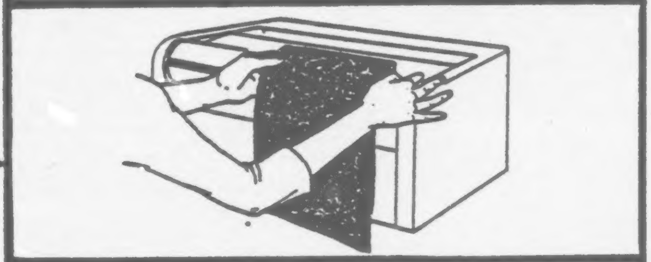
D. LOCK THE SPRING CLIPS AND CHECK THE FLATNESS AND ORIGINAL'S POSITION.



5. FIT THE STENCIL.

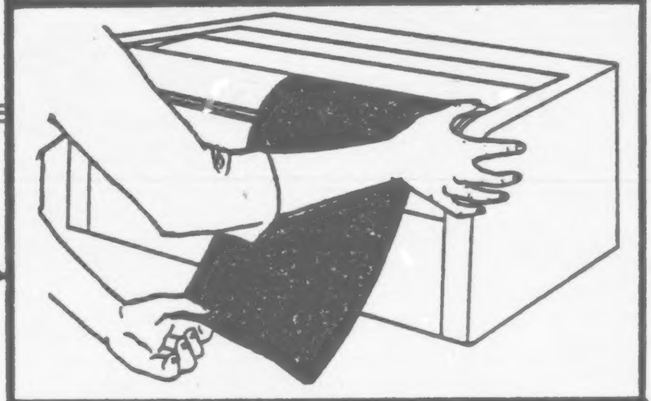
A. FIRST FOLD THE STENCIL BACK ON THE BOLD PRINTED LINE (6 CM FROM TOP EDGE) BELOW THE WORD RONEO. BE SURE TO HAVE A CLEAN SHARP FOLD.

B. PUT THE STENCIL ON THE CYLINDER (RIGHT HALF) SO THIS FOLDED LIP GOES DOWN INTO THE CLAMP WHICH IS HELD OPEN BY HOLDING THE "PIN" BACK. BE SURE THE FOLDED CREASE IS TIGHT AND FLAT TO THE LEAD EDGE OF THE CYLINDER.



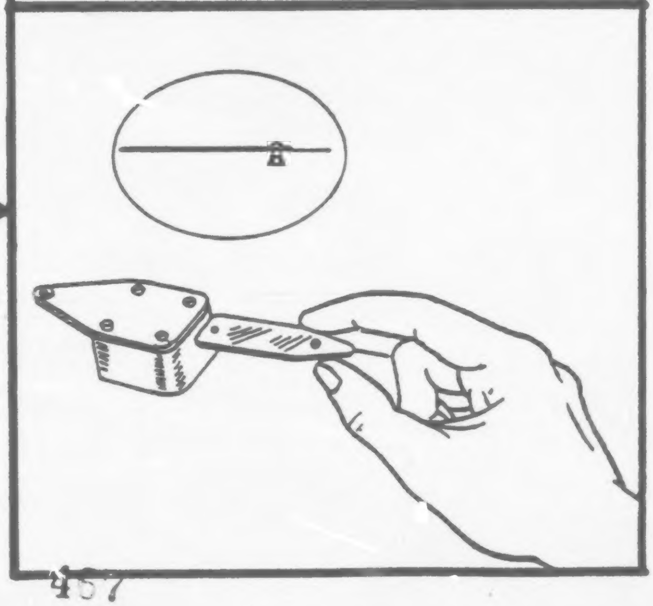
C. HOLD THE TAIL AND TURN CYLINDER. THE STENCIL MUST LAY FLAT AND BE STRAIGHT (WITHIN THE SIDE GUIDE LINES ON THE CYLINDER.

D. INSERT THE "T" CLAMP INTO THE SLOT WHILE KEEPING THE STENCIL FLAT.



E. LOCK THE TWO SPRING CLIPS. USING CARE, CHECK TO SEE THE STENCIL IS FLAT AND TIGHT.

6. CHECK THE STYLUS. THE FINE POINT OF THE NEEDLE MUST BE CLEAN, EVEN AND STRAIGHT. USING THE PENCIL-LIKE HONE IN THE DRAWER, BELOW THE RONEOTRONIC, REMOVE THE STYLUS AND CLEAN THE NEEDLE. HONE IT VERY LIGHTLY AND DON'T BEND THE NEEDLE. ASK THE INSTRUCTOR/ MANAGER FOR HELP IF YOU NEED IT.

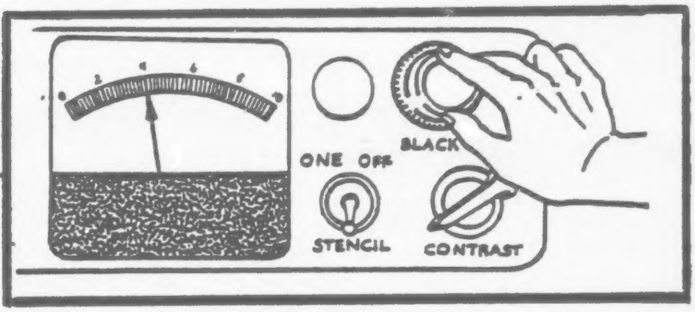


7. SET THE SCANNING PITCH (IN MOST CASES IT IS BEST TO USE A HIGH DENSITY, 600 LINES, FOR QUALITY). OUR MACHINE WILL AVERAGE 8 LINES PER SECOND.

JOB STEPS

8. THE WHITE KNOBS SHOULD BE FULLY CLOCKWISE (LAMPS OUT), THE COMPENSATOR AND CONTRAST KNOBS SHOULD BE FULLY COUNTER-CLOCKWISE.

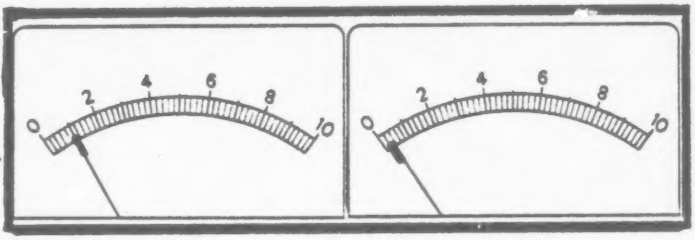
9. SET THE BLACK KNOB CLOCKWISE UNTIL YOU HAVE A METER READING OF 4MA (THE COVER MUST BE CLOSED TO SET).



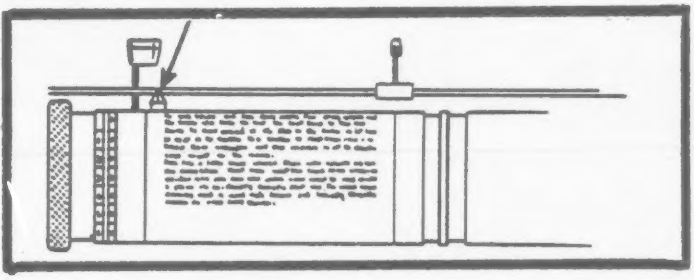
10. TURN THE CYLINDER AND POSITION THE LIGHT-SPOT ON THE WHITE BACKGROUND OF THE ORIGINAL (CLOSE THE COVER).

11.A. SET THE LARGE OUTSIDE WHITE KNOB TO A METER READING OF 1MA.

B. THEN SET THE SMALL INSIDE WHITE KNOB TO A METER READING OF .1MA.



12. PRESS THE CARRIAGE CONTROL DOWN AND GET THE POINTER JUST TO THE LEFT OF THE PRINTED MATTER OF THE ORIGINAL.



13. PRESS THE START BUTTON (LOWER RIGHT CORNER).

14. AFTER ABOUT 8 - 10 MINUTES, THE STENCIL WILL BE CUT AND THE MACHINE WILL STOP.

   A. REMOVE THE STENCIL GENTLY AND DON'T DROP THE "T" CLAMP.
   B. REMOVE THE ORIGINAL
   C. REPLACE BOTH "T" CLAMPS AND LOCK CLIPS.

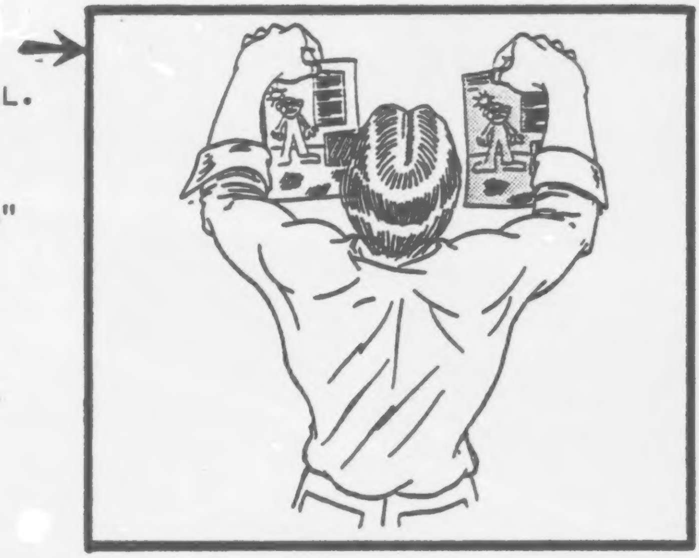
15. LOOK OVER YOUR STENCIL BY REMOVING THE BACKING SHEET, WITH CARE, FROM THE EMULSION (FROM THE TAIL END).

   A. WHEN YOU GET TO THE PART THAT WAS FOLDED BACK, LEAVE THE LIP AND TEAR THE BACKING OFF (PLACE THE LIP ON THE COUNTER AND TEAR THE BACKING OFF).

JOB STEPS

15. B. HOLD THE STENCIL EMULSION UP TO THE LIGHTS AND YOU CAN EASILY SEE WHERE THE STYLUS NEEDLE CUT.

    C. COMPARE WITH YOUR ORIGINAL.

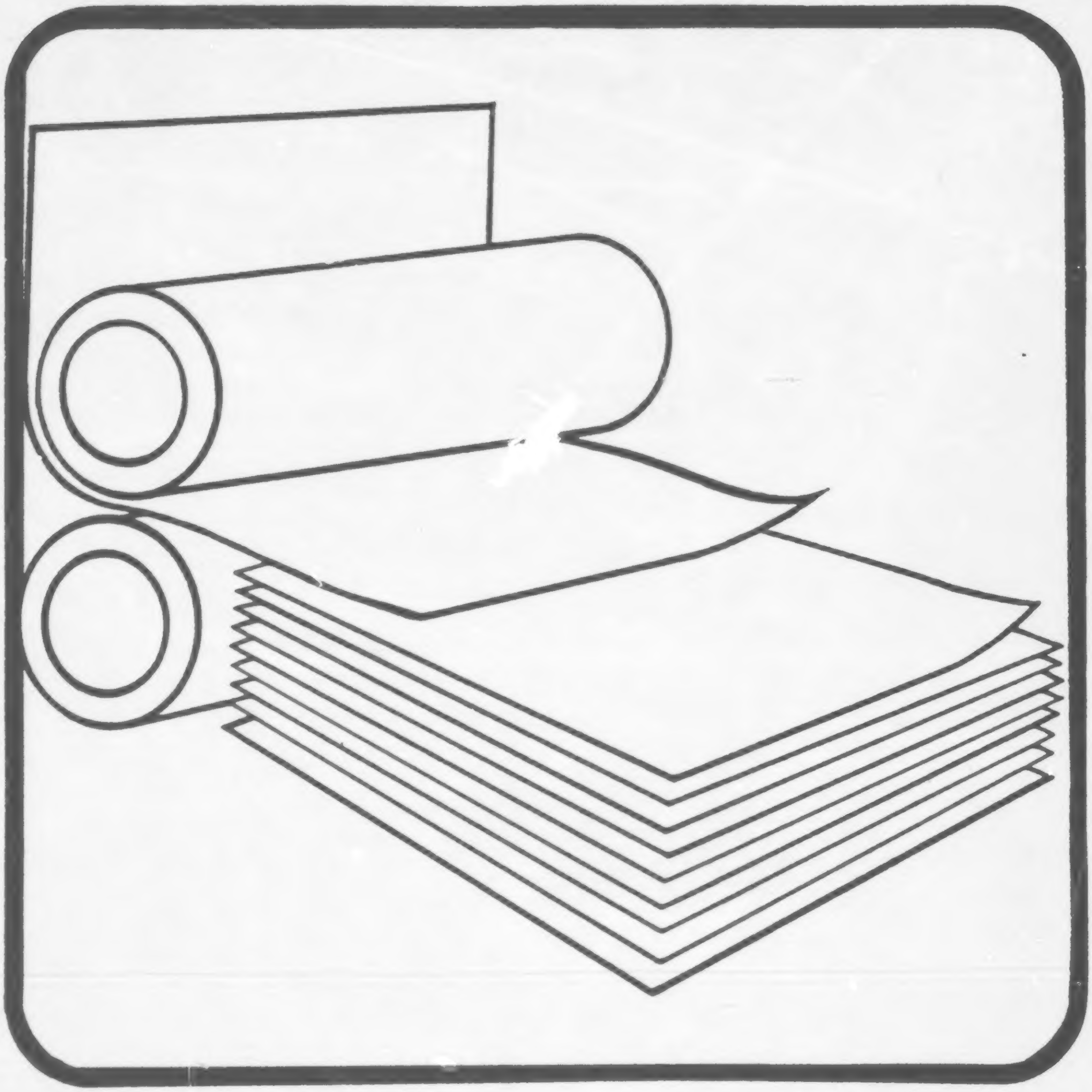


16. PLACE THIS STENCIL ON THE MIMEOGRAPH DUPLICATOR AND RUN A DOZEN COPIES OF SCRAP 8 1/2" X 11" PAPER.

NOTE: COMPLETE MOD #1401 15 008 FIRST; USE THIS FOR THAT MOD, OR HAVE SOMEONE DO THE MIMEOGRAPH FOR YOU. USE BOND PAPER; IT WILL SHOW MORE DETAIL. COMPARE THE FINAL PRINTS WITH THE ORIGINAL. WHICH COLORS, QUALITY AND MEDIA COME OUT BEST?

17. CLEAN UP YOUR AREA, TURN OFF MACHINE AND ALL KNOBS, THROW AWAY ALL SCRAP PAPER, MARK MATERIALS RETURNED AND PUT AWAY INSTRUCTION BOOK.

18. YOU DO NOT HAVE TO GET THIS WORK CHECKED UNLESS YOU HAVE A QUESTION. TURN IN MOD # FOR CREDIT.



graphics

unit: PLATEMAKING AND PROOFING

capital area career center

1401 12 013

module: 1401 12 013 3 **date:** DECEMBER 1977 **level:** IV

skill title: COLOR SEPARATIONS ON THE ELECTRONICS SCANNER

developed & written by: GLEN PETTIT

visuals by: STEVE BRAMER

PERFORMANCE OBJECTIVE

YOU ARE GOING TO LEARN:

HOW TO MAKE A COLOR-SEPARATION ON THE RONEOTRONIC 400 SCANNER AND HOW TO PROOF THE SEPARATION.

AND IN ORDER TO DO THIS YOU WILL NEED:

COLOR PHOTOGRAPH

KODAK COLOR PATCH AND GRAY SCALE

RONEOTRONVIC 400 SCANNER

SEPARATION BLANKS, FILM AND COLOR-KEY

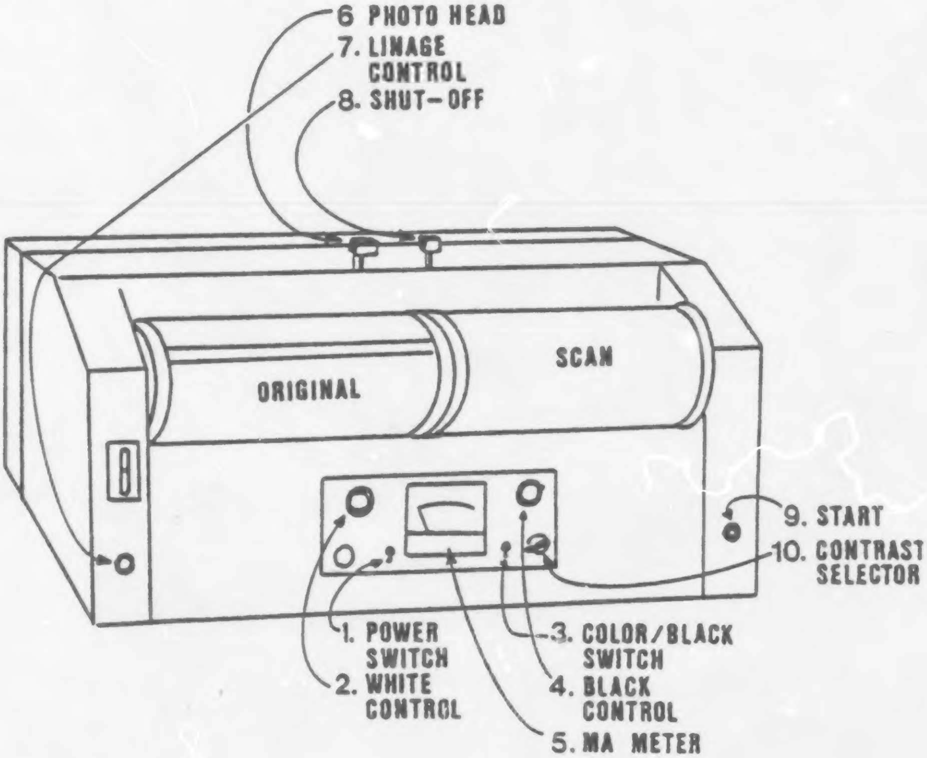
WE WILL KNOW YOU CAN DO IT WHEN:

1. YOU CAN POSITION COPY, FILTERS, LINAGE CONTRASTS AND MA METER READING TO PRODUCE THE 4 DIFFERENT COLOR SEPARATIONS FROM A COLOR PHOTOGRAPH.
2. YOU CAN JUDGE QUALITY, SHOOT NEGATIVES AND PRODUCE A GOOD SET OF COLOR-KEY PROOFS.

A TAPE OF THIS MODULE IS AVAILABLE.

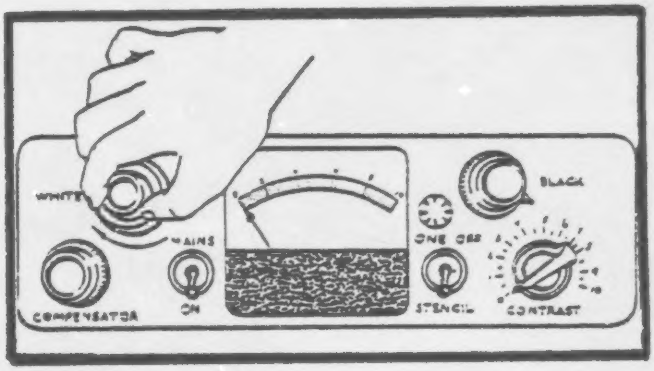
INFORMATION

THIS ELECTRONIC SCANNER IS VERY SIMILAR TO THE ONES USED TO TRANSMITT PHOTOGRAPHS TO EVERY NEWSPAPER OFFICE IN THE USA AT ONCE BY TELEPHONE LINES. IT CAN ALSO MAKE A SET OF COLOR SEPARATIONS (THE 4-BASIC COLORS: MAGENTA (RED), CYAN (BLUE), YELLOW AND BLACK CAN BE PRINTED ON A PRESS TO PRODUCE A FULL COLOR PRINT). THE COLOR SEPARATION IS NOT HIGH QUALITY BUT IT IS GOOD FOR MANY JOBS. THIS SEPARATION COSTS ONLY $4-$5 AS COMPARED TO OVER $100 FOR A PROFESSIONAL SEPARATION. YOU WILL NEED A SMALL COLOR PRINT OR COLOR PICTURE (TRY AND INCLUDE THE PRIMARY AND SECONDARY COLORS IN YOUR SELECTION).

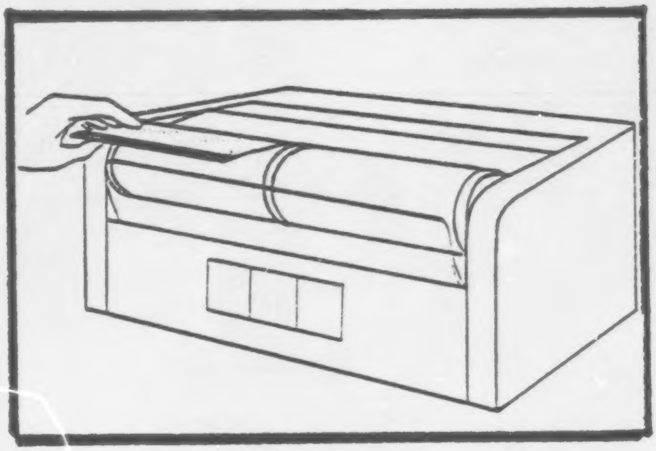


JOB STEPS

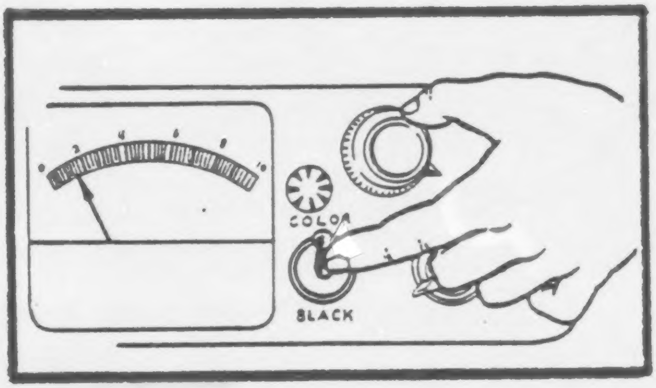
1. YOU MUST HAVE RECENTLY READ AND COMPLETED MODULE 1401 12 012, 1401 12 012 3, "USING THE ELECTRONIC SCANNER". IT WOULD BE A GOOD IDEA TO REVIEW THAT MODULE BEFORE STARTING THIS ONE, THE INSTRUCTION BOOK SHOULD BE IN THE DRAWER NEAR THE MACHINE.



2. SWITCH POWER ON (10 MINUTE WARM-UP). TURN THE "WHITE CONTROL" (#2) FULLY CLOCKWISE AND SET THE "CONTRAST" SELECTOR (#10) TO ZERO.

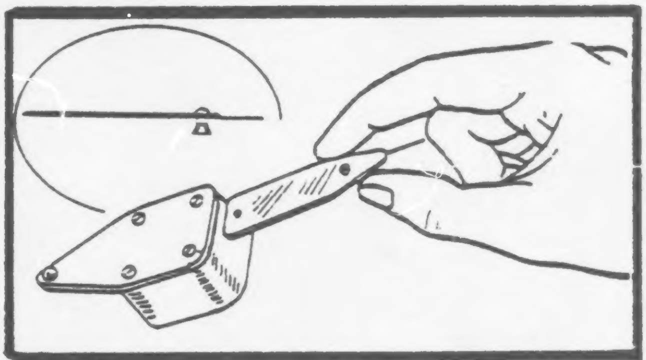


3. PLACE YOUR ORIGINAL COLOR PHOTOGRAPH OR COLOR PRINT(S) CENTERED UNDER THE "ORIGINAL" CYLINDER PLASTIC COVER, BE SURE THE PLASTIC IS CLEAN. INCLUDE A KODAK COLOR PATCH AND YOUR 12-STEP GRAY SCALE. YOU WILL BE REPRODUCING ON A 1/2 SIZE (5" WIDE) SHEET OF WHITE SEPARATION BLANK WHICH IS FOUND IN THE DRAWER UNDER THE SCANNER. PLACE THE SEPARATION BLANK ON THE SCAN CYLINDER CENTERED, BE SURE IT IS SNUG AND FLAT.

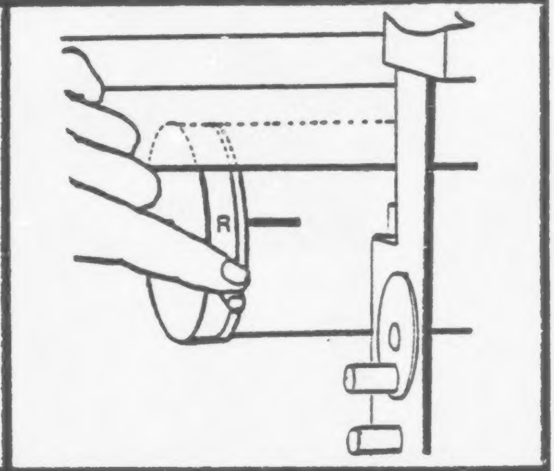


4. TURN THE "COLOR/BLACK" SWITCH (#3) TO COLOR.

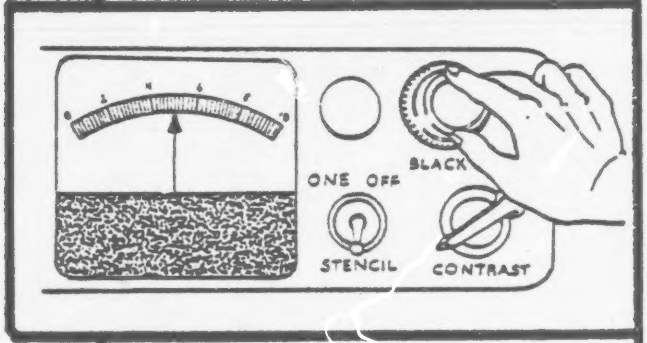
5. PLACE A NEW STYLE IN THE HOLDER. BE SURE IT IS SEATED STRAIGHT AND FIRM.



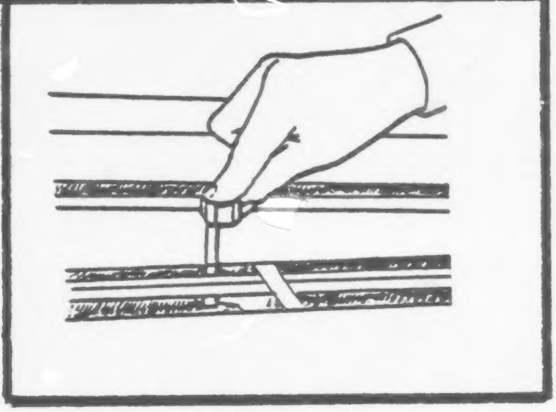
6. SET THE FILTER SELECTOR (INSIDE COVER TO LEFT OF SCANNER HEAD ASSEMBLY TO "R" FOR CYAN SEPARATION.



7. ADJUST THE "BLACK" CONTROL (#4) TO GIVE A READING OF 5 ON THE MA METER (#5).

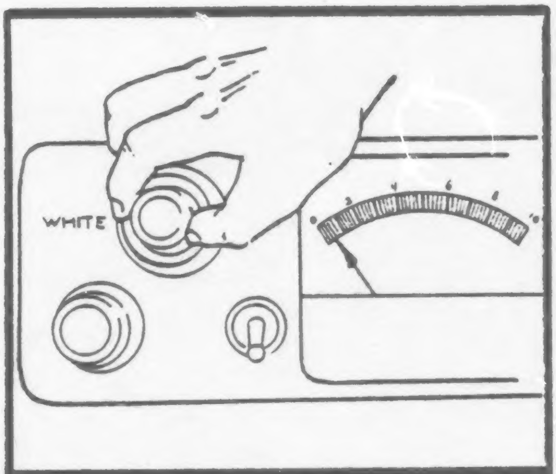


8. MOVE THE PHOTOHEAD (#6) TO POSITION THE LIGHT BEAM ON THE WHITE SEGMENT OF THE KODAK COLOR PATCH.



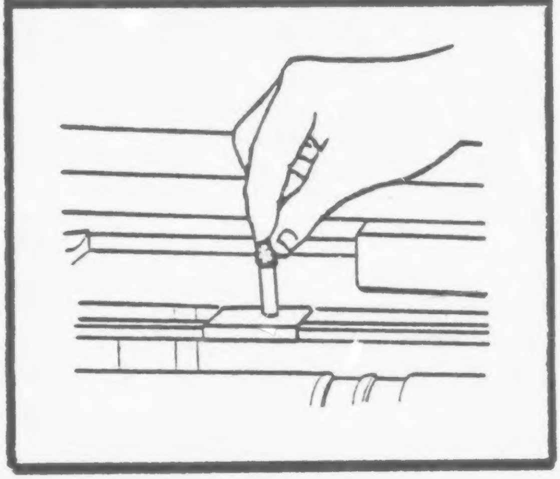
JOB STEPS

9. ADJUST THE "WHITE" CONTROL (#2) TO A READING OF .02 ON THE MA METER (#5).

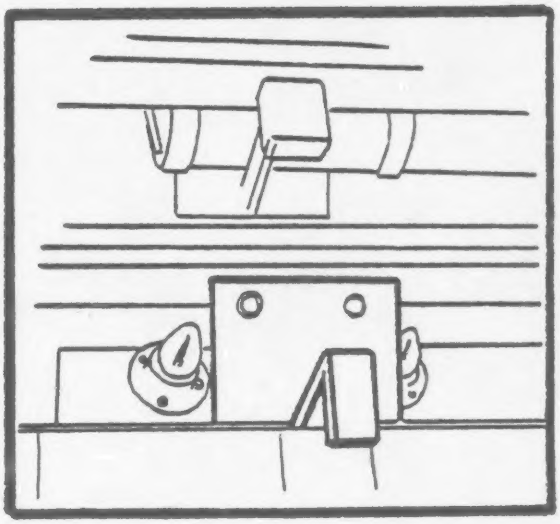


10. SET THE LINAGE CONTROL (#7) TO 600 LINES PER INCH.

11. MOVE THE PHOTOHEAD (#6) TO 1 CENTIMETER TO THE RIGHT OF THE ORIGINAL AND SET THE AUTOMATIC SHUT-OFF AT THIS POINT.



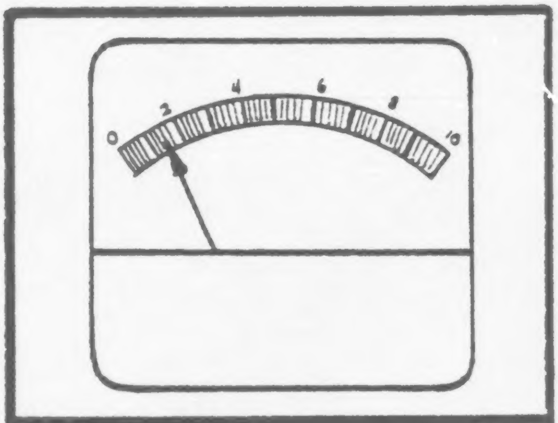
12. POSITION THE PHOTOHEAD (#6) 1 CENTIMETER TO THE LEFT OF THE ORIGINAL.



13. PUSH THE START BUTTON (#9). WHEN THE MACHINE STOPS (ABOUT 6 MINUTES). DO NOT CHANGE THE POSITION OF THE ORIGINAL OR THE SEPARATION.

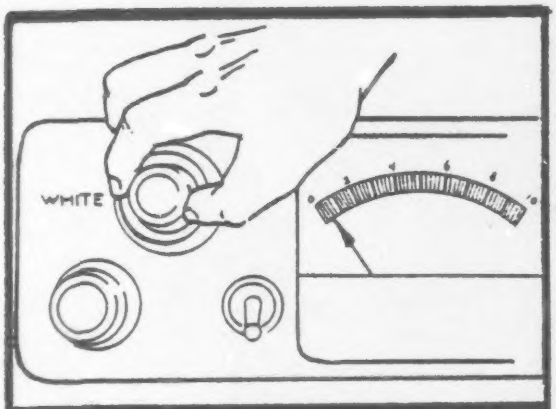
14. LOWER THE LINAGE CONTROL (#7) TO 400 LINES PER INCH.

15. MOVE THE PHOTOHEAD ALONG THE 12-STEP GRAY SCALE AND STOP AT THE POINT WHICH GIVES A METER READING OF 1.3 MA.

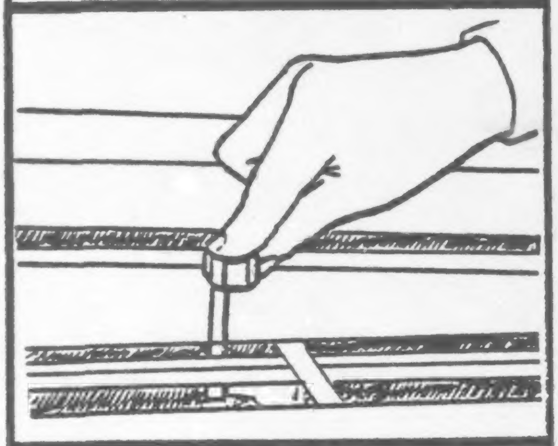


16. SET THE "CONTRAST" SELECTOR TO 2.

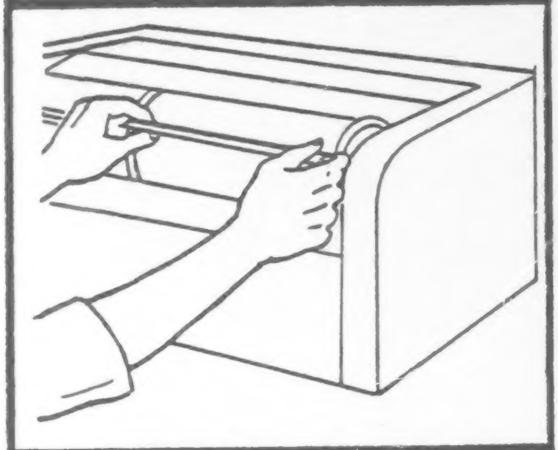
17. ADJUST THE "WHITE" CONTROL TO RESET MA METER READING TO .02 MA.



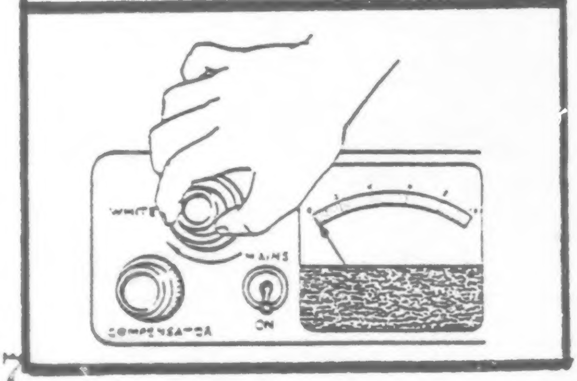
18. POSITION THE PHOTOHEAD TO THE LEFT OF THE ORIGINAL AGAIN AND PUSH THE START BUTTON (4 MINUTES TO SCAN).



19. WHEN MACHINE STOPS, REMOVE THE SEPARATION SCAN (NOT YOUR ORIGINAL) AND WRITE CYAN ON IT.

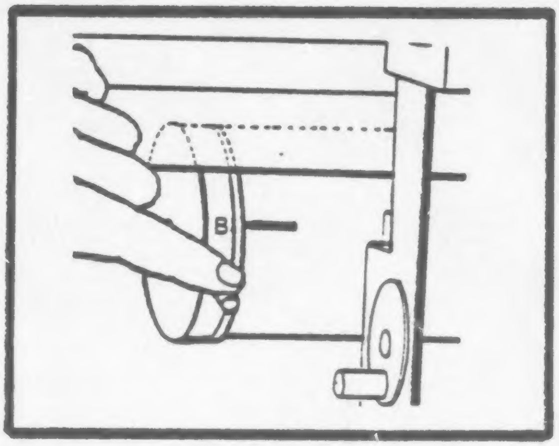


20. TO MAKE THE YELLOW SEPARATION: PUT THE SEPARATION BLANK ON THE SCAN CYLINDER. TURN THE "WHITE" CONTROL FULLY CLOCKWISE AND SET THE "CONTRAST" TO ZERO.



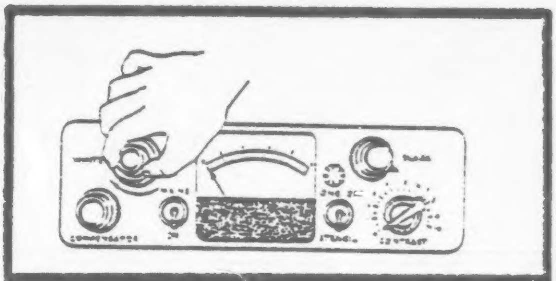
JOB STEPS

21. SET THE FILTER SELECTOR TO "B" FOR THE YELLOW SEPARATION.

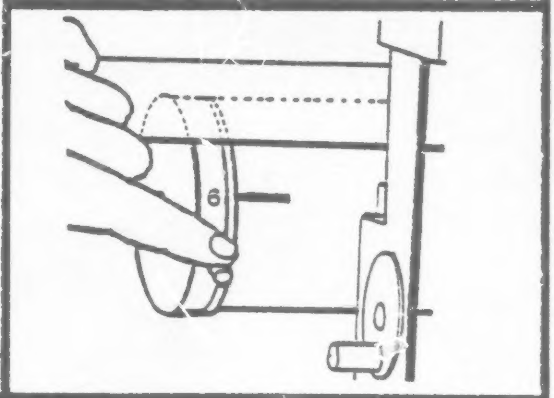


22. REPEAT STEPS 17 AND WRITE YELLOW ON YOUR FINAL SEPARATION.

23. TO MAKE THE MAGENTA SEPARATION: TURN THE "WHITE" CONTROL FULLY CLOCKWISE AND SET THE "CONTRAST" TO ZERO.

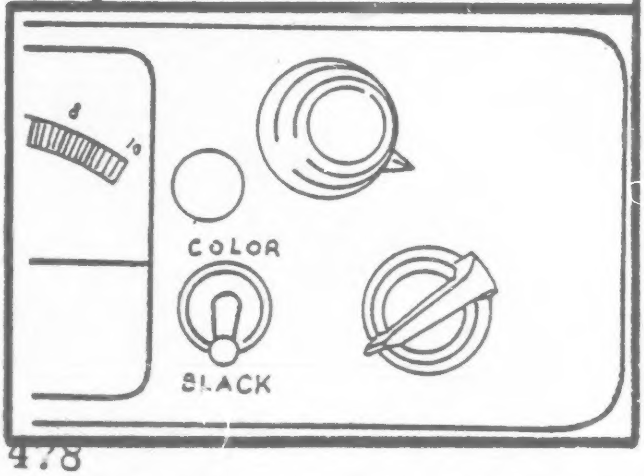


24. SET THE FILTER SELECTOR TO "6" FOR THE MAGENTA SEPARATION.

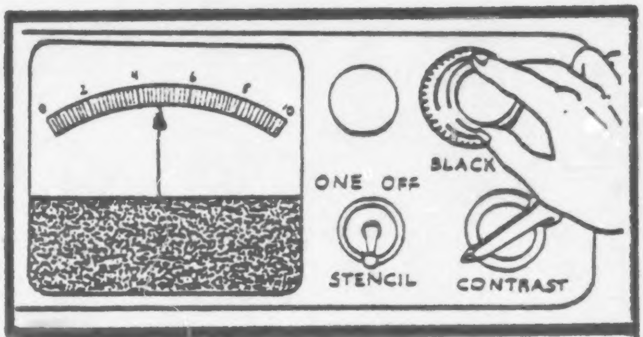


25. REPEAT STEPS 7 THROUGH 17 AND WRITE MAGENTA ON THE FINAL SEPARATION.

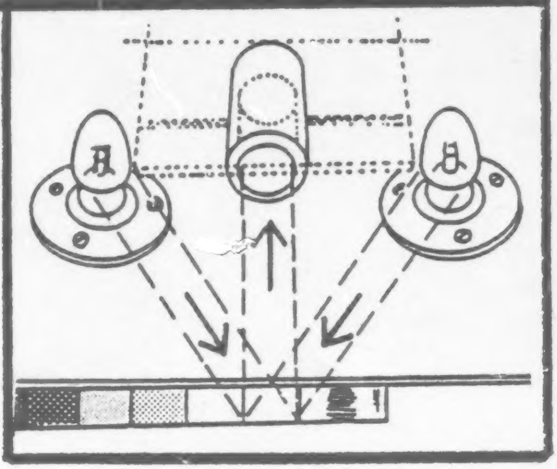
26. TO MAKE A BLACK SEPARATION: SET THE LINAGE CONTROL TO 500. PUSH "COLOR/BLACK" (#3) SWITCH TO THE BLACK POSITION.



27. ADJUST THE "BLACK" CONTROL (#4) TO GIVE A 5 MA READING.



28. MOVE THE PHOTOHEAD TO POSITION THE LIGHT BEAM ON THE WHITE PART OF THE GRAY SCALE (GRAY SCALE STEP 13). ADJUST THE "WHITE" CONTROL TO GIVE A 2 MA METER READING.



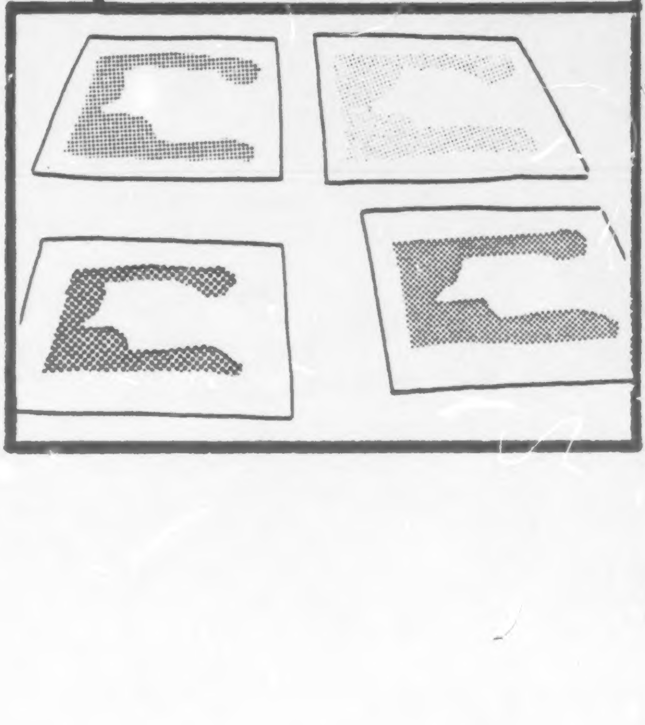
29. MOVE THE PHOTOHEAD TO THE LEFT OF THE ORIGINAL AND PUSH THE START BUTTON (ONLY 1 SCAN FOR THE BLACK SEPARATION).

30. WHEN MACHINE STOPS, SEPARATION IS COMPLETE, MARK BLACK ON THIS. REMOVE YOUR COPY, RETURN THE SCALES AND SECURE THE AREA.

31. ALL 4 SEPARATIONS ARE JUST BLACK ETCHES ON WHITE PAPER NOW, WE WANT TO MAKE A COLOR-KEY PROOF OF THESE. COMPUTE THE REDUCTION SO EACH SEPARATION WILL EASILY FIT ON 10 X 15 CENTIMETER (4" X 6") ORTHO FILTER FILM (ABOUT 50%).

JOB STEPS

32. SHOOT EACH OF THESE SEPARATIONS ONTO 10 X 15 CENTIMETER FILM (YOU GET EXACTLY 4 PIECES OF 10 X 15 CENTIMETER FILM FROM ONE SHOT OF 20 X 30 CENTIMETER FILM, NO WASTE), AND PROCESS NORMALLY... BE SURE TO USE A GRAY SCALE.



33. WHEN DRY, MAKE A SET OF COLOR-KEY PROOFS. CAREFULLY POSITION A 10 X 12 CENTIMETER PIECE OF COLOR-KEY FOR EACH OF THE PROCESS COLORS (ELIMINATE THE GRAY SCALES, OPAQUE IF NECESSARY AND LET THE COLOR PATCHES SHOW).

34. MOUNT YOUR PROOFS AND SHOW THESE PLUS YOUR ORIGINAL TO THE INSTRUCTOR FOR CREDIT.

END